

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Antonia Walker Examiner #: 75065 Date: 6/30/04
 Art Unit: 1752 Phone Number 301-272-1337 Serial Number: 10/613044
 Mail Box and Bldg/Room Location: DEH4DL4 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Bio Sheet Attached

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Phase search for compd a
 compd (VIII)

compd b

Thank you.

STAFF USE ONLY

Type of Search

Vendors and cost where applicable

Searcher: _____	NA Sequence (#) _____	STN _____
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: _____	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: _____	Other _____	Other (specify) _____



STIC Search Report

EIC 1700

STIC Database Tracking Number: 126340

TO: Amanda Walke
Location: REM 9D64
Art Unit : 1752
July 7, 2004

Case Serial Number: 10/613044

From: Barba Koroma
Location: EIC 1700
REM EO4 A30
Phone: 571 272 2546

barba.koroma@uspto.gov

Search Notes

Examiner Walke,
Please find attached results of the search you requested. Various components of the invention as spelt out in the claims and search request form were searched in REGISTRY and CAPLUS databases. For your convenience, titles of hits are listed to help you peruse them quickly followed by a detailed printout of records.

Please let me know if you have any questions.
Thanks.



STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher or contact:*

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- I am an examiner in Workgroup: Example: 1713
➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

- Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28



=> file reg

FILE 'REGISTRY' ENTERED AT 16:22:34 ON 07 JUL 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2004 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 6 JUL 2004 HIGHEST RN 705249-96-3
DICTIONARY FILE UPDATES: 6 JUL 2004 HIGHEST RN 705249-96-3

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> file caplus

FILE 'CAPLUS' ENTERED AT 16:22:39 ON 07 JUL 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is
held by the publishers listed in the PUBLISHER (PB) field (available
for records published or updated in Chemical Abstracts after December
26, 1996), unless otherwise indicated in the original publications.
The CA Lexicon is the copyrighted intellectual property of the
American Chemical Society and is provided to assist you in searching
databases on STN. Any dissemination, distribution, copying, or storing
of this information, without the prior written consent of CAS, is
strictly prohibited.

FILE COVERS 1907 - 7 Jul 2004 VOL 141 ISS 2
FILE LAST UPDATED: 6 Jul 2004 (20040706/ED)

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> d que

L4 STR

G11G2 2

VAR G1=S/I
 VAR G2=AK/CY
 NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 2

STEREO ATTRIBUTES: NONE

L6 76529 SEA FILE=CAPLUS ABB=ON PLU=ON (RESIST? OR PHOTORESIST) (5A) COM
 POSITION?
 L9 SEL PLU=ON L6 10000-20000 RN : 35210 TERMS
 L10 SEL PLU=ON L6 20000-30000 RN : 32358 TERMS
 L11 SEL PLU=ON L6 30000-40000 RN : 27521 TERMS
 L12 SEL PLU=ON L6 40000-50000 RN : 27190 TERMS
 L13 SEL PLU=ON L6 50000-60000 RN : 23460 TERMS
 L14 SEL PLU=ON L6 60000-70000 RN : 19001 TERMS
 L15 SEL PLU=ON L6 70000-76529 RN : 7830 TERMS
 L16 35210 SEA FILE=REGISTRY ABB=ON PLU=ON L9
 L17 32351 SEA FILE=REGISTRY ABB=ON PLU=ON L10
 L18 27515 SEA FILE=REGISTRY ABB=ON PLU=ON L11
 L19 27169 SEA FILE=REGISTRY ABB=ON PLU=ON L12
 L20 23420 SEA FILE=REGISTRY ABB=ON PLU=ON L13
 L21 18948 SEA FILE=REGISTRY ABB=ON PLU=ON L14
 L22 7809 SEA FILE=REGISTRY ABB=ON PLU=ON L15
 L23 133364 SEA FILE=REGISTRY ABB=ON PLU=ON (L16 OR L17 OR L18 OR L19 OR
 L20 OR L21 OR L22)
 L25 16020 SEA FILE=REGISTRY SUB=L23 SSS FUL L4
 L30 841111 SEA FILE=CAPLUS ABB=ON PLU=ON L25
 L43 7686 SEA FILE=CAPLUS ABB=ON PLU=ON RESIST AND L30
 L44 4932 SEA FILE=CAPLUS ABB=ON PLU=ON L43 AND COMPOSITION?
 L45 1 SEA FILE=CAPLUS ABB=ON PLU=ON US2003-613044/PRN,AP
 L47 2475 SEA FILE=CAPLUS ABB=ON PLU=ON PHOTORESIST (4A) COMPOSITION AND
 L44
 L48 500 SEA FILE=CAPLUS ABB=ON PLU=ON ACID (4A) GENERAT? AND L47
 L49 305 SEA FILE=CAPLUS ABB=ON PLU=ON L48 AND PREP/RL
 L51 35 SEA FILE=CAPLUS ABB=ON PLU=ON L49 AND CROSSLINK?
 L52 1 SEA FILE=CAPLUS ABB=ON PLU=ON L45 AND L51

=> d ti 1-35 l51

L51 ANSWER 1 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Photosensitive **composition** and **acid generator**

L51 ANSWER 2 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Intermediate layer material **composition** for multilayer
resist process and pattern formation process using the same

- L51 ANSWER 3 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Photoesist **composition**
- L51 ANSWER 4 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Negative-working high energy ray-sensitive **resist compositions** containing specific **acid generator**
- L51 ANSWER 5 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Negative **resist composition**
- L51 ANSWER 6 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Resist composition**
- L51 ANSWER 7 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Hydroxystyrene-based polymer **compositions** and their positively or negatively working photosensitive **compositions** for chemically amplified **resists**
- L51 ANSWER 8 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Negative-working **resist composition** containing sulfonic **acid-generating** photoacid
- L51 ANSWER 9 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Negative type radiation sensitive resin **composition**
- L51 ANSWER 10 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Negative **photoresist compositions**, **photoresist** films and their use
- L51 ANSWER 11 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Negative **resist composition** for ultra-microlithography
- L51 ANSWER 12 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Antireflective coating **compositions** comprising photoacid generators
- L51 ANSWER 13 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electron beam- or x-ray-sensitive chemically amplified negative-working **photoresist composition** for semiconductor device fabrication
- L51 ANSWER 14 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Positive-working alkali-soluble **photoresist composition**, substrate having photosensitive film, and formation of photoresist pattern
- L51 ANSWER 15 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electron beam or x-ray negative-working **resist composition**
- L51 ANSWER 16 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Negative-working **resist composition**

- L51 ANSWER 17 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Negative radiation-sensitive chemically amplified resin **composition**
- L51 ANSWER 18 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Antireflective coating **composition** containing photoacid generator, substrate having its coating layer, and manufacture of photoresist relief image using it
- L51 ANSWER 19 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Photocurable silicone polymers with good alkali development property, **photoresist compositions** containing them and method for **resist** patterning
- L51 ANSWER 20 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Composition** for antireflection or light absorption film and compounds for use in same
- L51 ANSWER 21 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Negative-working image recording material
- L51 ANSWER 22 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Negative-working radiation-sensitive **composition** containing cyclic polyphenol compound
- L51 ANSWER 23 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Chemically-amplified, positive-working **photoresist composition** containing **crosslinked** polymer and sulfonic acid generator
- L51 ANSWER 24 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Resist composition**, pattern formation method, and semiconductor device using it
- L51 ANSWER 25 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Radiation-sensitive resin **compositions** for chemically amplified **resists**
- L51 ANSWER 26 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Photosensitive **composition** containing acid, vinyl alcohol polymer, and photoacid-generator for photoresist
- L51 ANSWER 27 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Resist composition** for deep ultraviolet light
- L51 ANSWER 28 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Chemical-amplification **photoresist composition** for semiconductor device manufacture
- L51 ANSWER 29 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Negative-working **photoresist composition**

L51 ANSWER 30 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Photoresist compositions** using weak and strong
acid-generating agents

L51 ANSWER 31 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Negative-working **photoresist composition**

L51 ANSWER 32 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Aqueous base developable deep-UV **resist** based on chemically
amplified **crosslinking** of phenolic resin

L51 ANSWER 33 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Positive acting photoresist and method of producing same

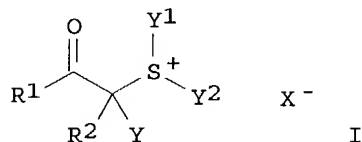
L51 ANSWER 34 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Chemically amplified DUV photoresists using a new class of photoacid
generating compounds

L51 ANSWER 35 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
TI Novel photoresist design based on electrophilic aromatic substitution

=> d ibib abs hitstr ind total l51

L51 ANSWER 1 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:286844 CAPLUS
DOCUMENT NUMBER: 140:329525
TITLE: Photosensitive **composition** and **acid**
generator
INVENTOR(S): Kodama, Kunihiro
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 83 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1406122	A2	20040407	EP 2003-21631	20030925
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2004117688	A2	20040415	JP 2002-279273	20020925
US 2004072097	A1	20040415	US 2003-668348	20030924
PRIORITY APPLN. INFO.:			JP 2002-279273	A 20020925
OTHER SOURCE(S):		MARPAT 140:329525		
GI				



AB A photosensitive **composition** comprises an **acid generator** of the formula I (R1 = alkyl; R2 = H, alkyl, aryl; Y = alkyl; Y1, Y2 = alkyl, aryl, aralkyl, hetero atom-containing aromatic; R1 and

R2 may be bonded to each other to form a ring; R2 and Y may be bonded to each other to form a ring; Y1 and Y2 may be bonded to each other to form a ring; two or more structures of the general formula I may be bonded to each other at any position of R1, R2 or Y, or Y1 or Y2 via a connecting group; X = non-nucleophilic anion)., an alkaline developer-soluble resin, an acid

crosslinking agent, a basic compound, and a surfactant. The object of the present invention is to provide an **acid generator** that has a high transparency against rays of not longer than 220 nm, has an enhanced photodegrdn. ability as compared with conventionally known **acid generators**, thereby revealing high sensitivity, and providing a good **resist** profile. The photosensitive **composition** of the present invention has excellent sensitivity and pattern profile.

IT 66003-78-9 133710-62-0 135133-12-9
 138529-81-4 144317-44-2 177034-80-9
 227199-92-0 241806-75-7 258341-98-9
 258872-05-8 261917-44-6 284474-28-8
 301153-77-5 301664-71-1 301664-72-2
 347193-28-6 365971-84-2

RL: TEM (Technical or engineered material use); USES (Uses)
 (acid generator; photosensitive **composition**
 and acid generator)

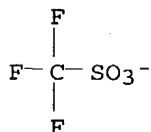
RN 66003-78-9 CAPLUS

CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI)
 (CA INDEX NAME)

CM 1

CRN 37181-39-8

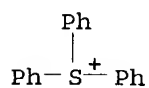
CMF C F3 O3 S



CM 2

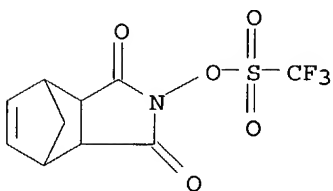
CRN 18393-55-0

CMF C18 H15 S



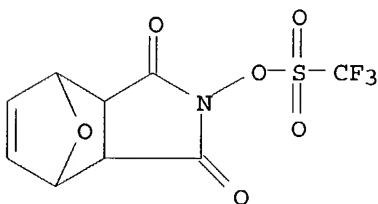
RN 133710-62-0 CAPLUS

CN 4,7-Methano-1H-isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2-
[[trifluoromethyl)sulfonyl]oxy]- (9CI) (CA INDEX NAME)



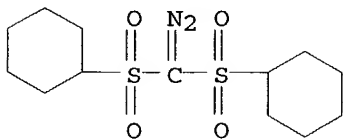
RN 135133-12-9 CAPLUS

CN 4,7-Epoxy-1H-isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2-
[[trifluoromethyl)sulfonyl]oxy]- (9CI) (CA INDEX NAME)



RN 138529-81-4 CAPLUS

CN Cyclohexane, 1,1'-[(diazomethylene)bis(sulfonyl)]bis- (9CI) (CA INDEX NAME)



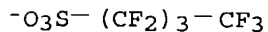
RN 144317-44-2 CAPLUS

CN Sulfonium, triphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 45187-15-3

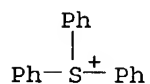
CMF C4 F9 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



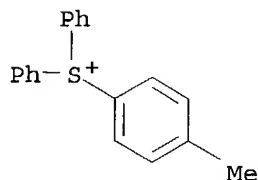
RN 177034-80-9 CAPLUS

CN Sulfonium, (4-methylphenyl)diphenyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47045-31-8

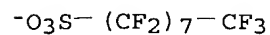
CMF C19 H17 S



CM 2

CRN 45298-90-6

CMF C8 F17 O3 S



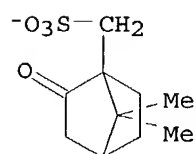
RN 227199-92-0 CAPLUS

CN Sulfonium, triphenyl-, salt with 7,7-dimethyl-2-oxobicyclo[2.2.1]heptane-1-methanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 55077-28-6

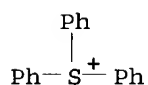
CMF C10 H15 O4 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



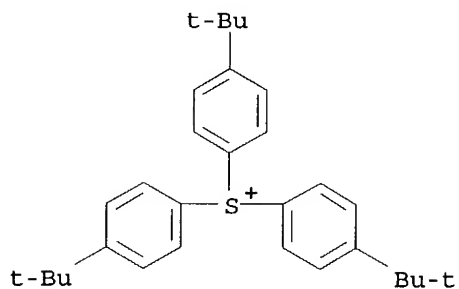
RN 241806-75-7 CAPLUS

CN Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 91815-56-4

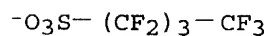
CMF C30 H39 S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



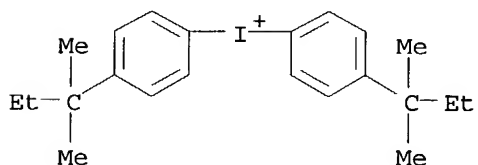
RN 258341-98-9 CAPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

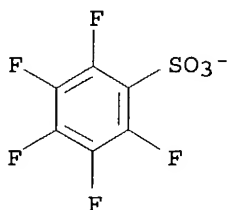
CMF C22 H30 I



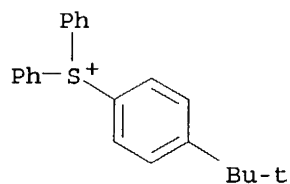
CM 2

CRN 46377-88-2

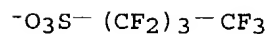
CMF C6 F5 O3 S



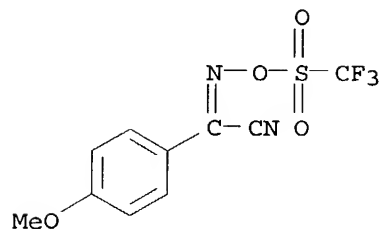
RN 258872-05-8 CAPLUS
 CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]diphenyl-, salt with
 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX
 NAME)
 CM 1
 CRN 66482-54-0
 CMF C22 H23 S



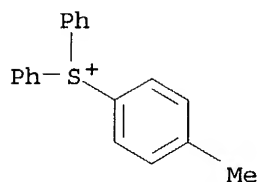
CM 2
 CRN 45187-15-3
 CMF C4 F9 O3 S



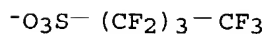
RN 261917-44-6 CAPLUS
 CN Benzeneacetonitrile, 4-methoxy- α -[[[(trifluoromethyl)sulfonyl]oxy]im
 ino]- (9CI) (CA INDEX NAME)



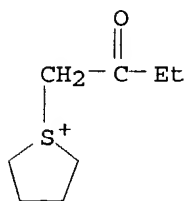
RN 284474-28-8 CAPLUS
 CN Sulfonium, (4-methylphenyl)diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)
 CM 1
 CRN 47045-31-8
 CMF C19 H17 S



CM 2
 CRN 45187-15-3
 CMF C4 F9 O3 S



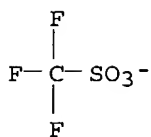
RN 301153-77-5 CAPLUS
 CN Thiophenium, tetrahydro-1-(2-oxobutyl)-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)
 CM 1
 CRN 301153-76-4
 CMF C8 H15 O S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



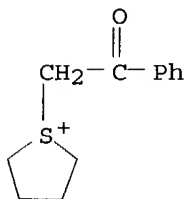
RN 301664-71-1 CAPLUS

CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX
NAME)

CM 1

CRN 58162-29-1

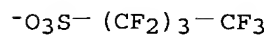
CMF C12 H15 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



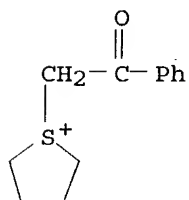
RN 301664-72-2 CAPLUS

CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1

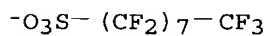
CMF C12 H15 O S



CM 2

CRN 45298-90-6

CMF C8 F17 O3 S



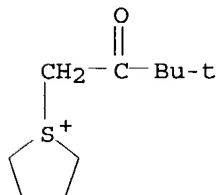
RN 347193-28-6 CAPLUS

CN Thiophenium, 1-(3,3-dimethyl-2-oxobutyl)tetrahydro-, salt with
trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 347193-27-5

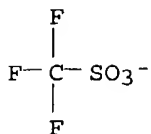
CMF C10 H19 O S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



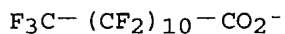
RN 365971-84-2 CAPLUS

CN Sulfonium, triphenyl-, salt with tricosafuorododecanoic acid (1:1) (9CI)
(CA INDEX NAME)

CM 1

CRN 171978-95-3

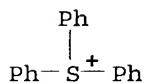
CMF C12 F23 O2



CM 2

CRN 18393-55-0

CMF C18 H15 S



IT 29420-49-3, Potassium nonafluorobutanesulfonate

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of photoacid generator)

RN 29420-49-3 CAPLUS

CN 1-Butanesulfonic acid, 1,1,2,2,3,3,4,4,4-nonafluoro-, potassium salt (8CI,
9CI) (CA INDEX NAME)

HO₃S- (CF₂)₃-CF₃

● K

IC ICM G03F007-004
ICS G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST photosensitive compn acid generator
photoresist photolithog

IT Polysiloxanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(KP-341, Troysol S-366; photosensitive composition and acid generator)

IT Photolithography
Photoresists
(photosensitive composition and acid generator)

IT 677351-28-9P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acid generator; photosensitive composition and acid generator)

IT 66003-78-9 133710-62-0 135133-12-9
138529-81-4 144317-44-2 177034-80-9
220475-58-1 227199-92-0 241806-75-7
258341-98-9 258872-05-8 261917-44-6
284474-28-8 301153-77-5 301664-71-1
301664-72-2 347193-28-6 365971-84-2
389859-76-1 391232-40-9 398141-18-9 470482-89-4 474510-73-1
610301-07-0 677351-29-0 677351-30-3 677351-31-4 677351-32-5
677351-34-7 677351-36-9 677351-37-0 677351-39-2 677351-41-6
677351-43-8 677351-45-0 677351-47-2 677351-48-3 677351-50-7
677351-52-9 677351-54-1 677351-56-3 677351-57-4 677351-58-5
677351-60-9 677351-62-1 677351-64-3 677351-65-4 677351-66-5
RL: TEM (Technical or engineered material use); USES (Uses)
(acid generator; photosensitive composition and acid generator)

IT 141-07-1 3089-11-0 4356-60-9 161679-94-3 162846-57-3 162846-59-5
185502-14-1
RL: TEM (Technical or engineered material use); USES (Uses)
(crosslinking agent; photosensitive composition and acid generator)

IT 143336-94-1P 250378-10-0P 289623-64-9P 312620-54-5P 359635-35-1P
370102-83-3P 370866-39-0P 391232-36-3P 391613-77-7P 398140-38-0P
398140-43-7P 398140-45-9P 398140-57-3P 398140-59-5P 398140-68-6P
398140-69-7P 398140-77-7P 398140-80-2P 405509-19-5P 406702-00-9P
430437-18-6P 459418-30-5P 460754-13-6P 482609-97-2P 508210-04-6P

515876-73-0P 521303-15-1P 521303-16-2P 607710-65-6P 607710-66-7P
 607710-67-8P 607710-68-9P 607710-69-0P 607710-70-3P 607710-71-4P
 607710-72-5P 607710-73-6P 607710-77-0P 610300-97-5P 610300-98-6P
 610301-00-3P 610301-01-4P 610301-03-6P 610301-04-7P 610301-05-8P
 615278-35-8P 654076-36-5P 676515-93-8P 677351-18-7P 677351-19-8P
 677351-20-1P 677351-22-3P 677351-24-5P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
 (photosensitive **composition** and **acid generator**)

IT 24979-69-9 24979-70-2 129674-22-2 137462-24-9, Megafac F176
 158593-28-3 177034-75-2 185405-14-5 200808-68-0 216679-67-3,
 Megafac R08 321164-59-4 325143-38-2 345212-27-3 372968-15-5
 610301-50-3 677351-26-7

RL: TEM (Technical or engineered material use); USES (Uses)
 (photosensitive **composition** and **acid generator**)

IT **29420-49-3**, Potassium nonafluorobutanesulfonate 55339-64-5

RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of photoacid generator)

L51 ANSWER 2 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2004:219905 CAPLUS

DOCUMENT NUMBER: 140:278421

TITLE: Intermediate layer material **composition** for multilayer **resist** process and pattern formation process using the same

INVENTOR(S): Uenishi, Kazuya; Sato, Kenichiro

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: U.S. Pat. Appl. Publ., 37 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004053162	A1	20040318	US 2003-652320	20030902
JP 2004094029	A2	20040325	JP 2002-256737	20020902

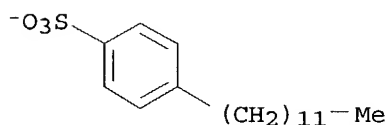
PRIORITY APPLN. INFO.: JP 2002-256737 A 20020902

AB The present invention provides an intermediate layer material **composition** for a multilayer **resist** process, which is soluble in an organic solvent, excellent in storage stability, and has no problem with regard to a footing shape, a pattern separation and a line edge roughness in patterning an upper **resist**, and a pattern formation process using the intermediate layer material **composition**, in which the intermediate layer material **composition** for a multilayer **resist** process, comprises a polymer (component A) containing a repeating unit having on a side chain thereof a specific structure containing a silicon atom-oxygen atom bond, and the pattern formation process using the same.

IT 287925-55-7
 RL: TEM (Technical or engineered material use); USES (Uses)
 (acid generator; intermediate layer material
 composition for multilayer resist process containing)
 RN 287925-55-7 CAPLUS
 CN Sulfonium, triphenyl-, salt with 4-dodecylbenzenesulfonic acid (1:1) (9CI)
 (CA INDEX NAME)

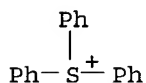
CM 1

CRN 18777-56-5
 CMF C18 H29 O3 S



CM 2

CRN 18393-55-0
 CMF C18 H15 S



IC ICM G03F007-00
 NCL 430270100; 430905000; 430913000; 430311000; 430330000; 522148000;
 522172000; 524861000
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 38, 76
 ST intermediate layer material photoresist photolithog
 IT Photolithography
 Photoresists
 (intermediate layer material composition for multilayer
 resist process and pattern formation process using same)
 IT 220155-97-5 287925-55-7 667888-64-4 672926-27-1
 RL: TEM (Technical or engineered material use); USES (Uses)
 (acid generator; intermediate layer material
 composition for multilayer resist process containing)
 IT 3089-11-0 17464-88-9 161679-94-3 185502-15-2 672926-25-9
 672926-26-0
 RL: TEM (Technical or engineered material use); USES (Uses)
 (crosslinking agent; intermediate layer material
 composition for multilayer resist process containing)

IT 672926-06-6P
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
 (intermediate layer material **composition** for multilayer **resist** process containing)

IT 672926-07-7 672926-08-8 672926-09-9 672926-10-2 672926-11-3
 672926-12-4 672926-14-6 672926-15-7 672926-17-9 672926-19-1
 672926-20-4 672926-22-6 672926-24-8 672936-94-6 672936-96-8
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (intermediate layer material **composition** for multilayer **resist** process containing)

IT 108-94-1, Cyclohexanone, uses 110-43-0, 2-Heptanone 123-86-4, Butyl acetate 3852-09-3 98516-30-4, Propylene glycol monoethyl ether acetate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (solvent; intermediate layer material **composition** for multilayer **resist** process containing)

IT 216679-67-3, Megafac R08
 RL: TEM (Technical or engineered material use); USES (Uses)
 (surfactant; intermediate layer material **composition** for multilayer **resist** process containing)

L51 ANSWER 3 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2004:219903 CAPLUS
 DOCUMENT NUMBER: 140:278419
 TITLE: Photoesist **composition**
 INVENTOR(S): Takahashi, Hyou; Mizutani, Kazuyoshi; Shirakawa, Koji; Yasunami, Shoichiro
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
 SOURCE: U.S. Pat. Appl. Publ., 98 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004053160	A1	20040318	US 2003-613044	20030707
PRIORITY APPLN. INFO.:			JP 2002-196011	A 20020704
			JP 2002-261345	A 20020906
			JP 2003-85831	A 20030326

OTHER SOURCE(S): MARPAT 140:278419

AB A **resist composition** comprises: (A) a compound capable of generating an active seed upon irradiation with one of an actinic ray and a radiation, (B) a compound capable of reacting with the active seed generated from the compound (A) and/or performing electron transfer to generate an active seed different from the active seed generated from the compound (A), and (C) a compound capable of performing electron transfer from the active seed generated from the compound (B) to **generate an acid**, wherein supposing that the 1/2 wave of the oxidation potential of the active seed generated from the compound (B) is Epa and the 1/2 wave of the

reduction potential of the active seed generated from the compound (C) is Epc , the relationship: Epc - Epa > 0 is satisfied.

IT 66003-78-9 111281-12-0 129946-88-9
144317-44-2 177786-98-0 195072-48-1
338445-31-1

RL: TEM (Technical or engineered material use); USES (Uses)
(acid generator; photoresist
composition containing)

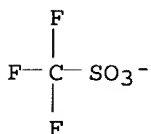
RN 66003-78-9 CAPLUS

CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI)
(CA INDEX NAME)

CM 1

CRN 37181-39-8

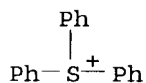
CMF C F3 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



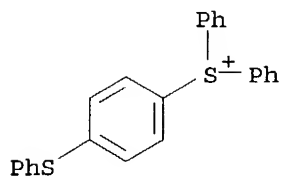
RN 111281-12-0 CAPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with
trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47480-44-4

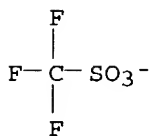
CMF C24 H19 S2



CM 2

CRN 37181-39-8

CMF C F3 O3 S



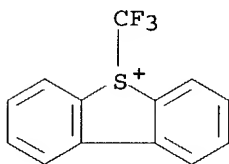
RN 129946-88-9 CAPLUS

CN Dibenzothiophenium, 5-(trifluoromethyl)-, salt with
trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 129946-87-8

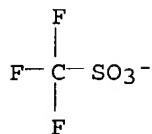
CMF C13 H8 F3 S



CM 2

CRN 37181-39-8

CMF C F3 O3 S

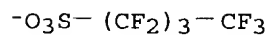


RN 144317-44-2 CAPLUS
 CN Sulfonium, triphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 45187-15-3

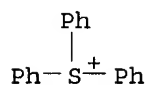
CMF C4 F9 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S

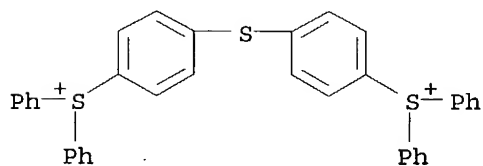


RN 177786-98-0 CAPLUS
 CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with trifluoromethanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

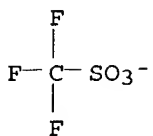
CRN 74227-34-2

CMF C36 H28 S3



CM 2

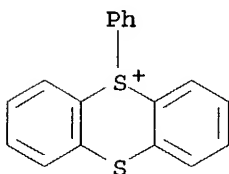
CRN 37181-39-8
CMF C F3 O3 S



RN 195072-48-1 CAPLUS
CN Thianthrenium, 5-phenyl-, salt with trifluoromethanesulfonic acid (1:1)
(9CI) (CA INDEX NAME)

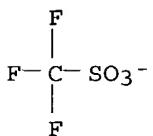
CM 1

CRN 47041-10-1
CMF C18 H13 S2



CM 2

CRN 37181-39-8
CMF C F3 O3 S

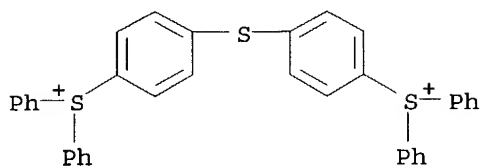


RN 338445-31-1 CAPLUS
CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:2) (9CI) (CA INDEX
NAME)

CM 1

CRN 74227-34-2

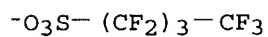
CMF C36 H28 S3



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



IT 19600-49-8

RL: TEM (Technical or engineered material use); USES (Uses)
(photoresist composition containing)

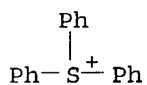
RN 19600-49-8 CAPLUS

CN Sulfonium, triphenyl-, acetate (8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 18393-55-0

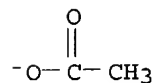
CMF C18 H15 S



CM 2

CRN 71-50-1

CMF C2 H3 O2



IT 139-66-2, Diphenyl sulfide 1493-13-6, Trifluoromethane
sulfonic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of acid generator for photoresist composition)

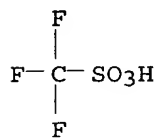
RN 139-66-2 CAPLUS

CN Benzene, 1,1'-thiobis- (9CI) (CA INDEX NAME)

Ph-S-Ph

RN 1493-13-6 CAPLUS

CN Methanesulfonic acid, trifluoro- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM G03F007-00

ICS G03F007-004

NCL 430270100; 430914000; 430921000; 430919000; 430925000; 430966000;
430942000; 430927000

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST photoresist compn

IT Photoresists

(photoresist composition)

IT 66003-78-9 111281-12-0 129946-88-9

143521-46-4 144317-44-2 177786-98-0

195072-48-1 338445-31-1 578741-79-4 578741-92-1

641638-14-4 641638-15-5 641638-16-6 641638-17-7 641638-26-8

641638-27-9 641638-32-6 672326-86-2 672326-87-3 672326-88-4

672326-89-5 672326-90-8 672326-91-9 672326-92-0 672326-93-1

672326-95-3

RL: TEM (Technical or engineered material use); USES (Uses)

(acid generator; photoresist

composition containing)

IT 161679-95-4 185502-14-1 197087-74-4

RL: TEM (Technical or engineered material use); USES (Uses)

(crosslinking agent; photoresist composition

containing)

IT 173786-80-6DP, hydrolyzed

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(photoresist composition containing)

IT 764-78-3 2114-42-3 3891-33-6 10581-12-1 17351-75-6 17455-13-9,

1,4,7,10,13,16-Hexaoxacyclooctadecane 19600-49-8 25183-63-5

41440-39-5 58621-56-0 72196-37-3 342809-27-2 359434-76-7

377780-83-1 398141-29-2 398141-30-5 398141-45-2 398141-47-4

672326-74-8 672326-75-9 672326-76-0 672326-77-1 672326-78-2

672326-79-3 672326-81-7 672326-82-8 672326-83-9 672326-84-0
 672326-85-1
 RL: TEM (Technical or engineered material use); USES (Uses)
 (photoresist composition containing)

IT 139-66-2, Diphenyl sulfide 1493-13-6, Trifluoromethane
 sulfonic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of acid generator for photoresist
 composition)

IT 144767-83-9P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (preparation of acid generator for photoresist
 composition)

IT 110726-28-8, Trisp-PA
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of crosslinking agent for photoresist
 composition)

IT 161679-94-3P 162846-57-3P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (preparation of crosslinking agent for photoresist
 composition)

L51 ANSWER 4 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2004:200857 CAPLUS

DOCUMENT NUMBER: 140:243592

TITLE: Negative-working high energy ray-sensitive
 resist compositions containing
 specific acid generator

INVENTOR(S): Yasunami, Shoichiro; Takahashi, Akira; Mizutani,
 Kazuyoshi

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 57 pp.

CODEN: JKXXAF

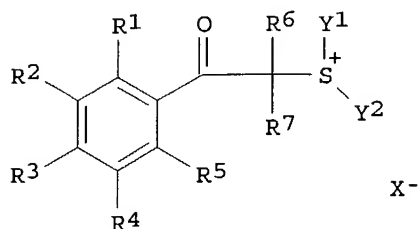
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2004077811	A2	20040311	JP 2002-238158	20020819
PRIORITY APPLN. INFO.:			JP 2002-238158	20020819
OTHER SOURCE(S):	MARPAT 140:243592			
GI				



AB The title **composition** contains alkali-solubilizable resins, an actinic ray- or radiation-sensitive acid-sensitive **crosslinking** agent, and an **acid-generating** compound, wherein the **acid-generating** compound has structure I (R1-5 = H, nitro, halo, alkyl, etc.; R6-7 = H; Y1-2 = alkyl, alkenyl, aryl; X- = non-nucleophilic anion). The **composition** shows high sensitivity and provides pattern of high resolution and good profile.

IT 100-68-5, Methyl phenyl sulfide 2926-27-4, Potassium trifluoromethanesulfonate

RL: RCT (Reactant); RACT (Reactant or reagent)
(acid generator in neg.-working photoresist compns.)

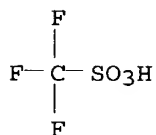
RN 100-68-5 CAPLUS

CN Benzene, (methylthio)- (9CI) (CA INDEX NAME)

Me⁻ S⁻ Ph

RN 2926-27-4 CAPLUS

CN Methanesulfonic acid, trifluoro-, potassium salt (8CI, 9CI) (CA INDEX NAME)



● K

IC ICM G03F007-004

ICS G03F007-038; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST neg resist compn acid generator

IT Negative photoresists
 (neg.-working high energy ray-sensitive **resist compns**
 . containing specific **acid generator**)

IT 100-68-5, Methyl phenyl sulfide 585-71-7, α -Phenethyl
 bromide 2926-27-4, Potassium trifluoromethanesulfonate
 14104-20-2, Silver borofluoride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (**acid generator in neg.-working photoresist**
compns.)

IT 666256-50-4P 666256-52-6P 666256-58-2P 666256-59-3P 666256-60-6P
 666256-69-5P 669008-48-4P 669008-49-5P 669008-51-9P 669008-52-0P
 669008-53-1P 669008-54-2P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (**acid generator in neg.-working photoresist**
compns.)

L51 ANSWER 5 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2004:142670 CAPLUS

DOCUMENT NUMBER: 140:207467

TITLE: Negative **resist composition**

INVENTOR(S): Yasunami, Shoichiro; Shirakawa, Koji

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: U.S. Pat. Appl. Publ., 43 pp.
 CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004033441	A1	20040219	US 2003-642291	20030818
JP 2004077810	A2	20040311	JP 2002-238157	20020819

PRIORITY APPLN. INFO.: JP 2002-238157 A 20020819

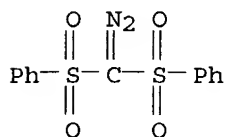
AB A neg. **resist composition** of the present invention
 comprises: (A) an alkali-soluble resin; (B-1) a **crosslinking** agent
 capable of **crosslinking** with the alkali-soluble resin (A) by the
 action of an acid, in which the **crosslinking** agent is a phenol
 compound containing: in the mol. one or more benzene rings; and at least two
crosslinking groups bonded to any of the benzene rings, the
crosslinking group being a group selected from the group
 consisting of a hydroxymethyl group, an alkoxymethyl group and an
 acyloxymethyl group; (B-2) a **crosslinking** agent capable of
crosslinking with the alkali-soluble resin (A) by the action of an
 acid, in which the **crosslinking** agent contains at least two
 specific groups; and (C) a compound capable of **generating** an
acid upon irradiation with an actinic ray or radiation.

IT 1886-74-4 137309-10-5 144317-44-2
 153698-46-5 258341-98-9 270563-96-7
 312386-77-9 328006-70-8
 RL: TEM (Technical or engineered material use); USES (Uses)

(acid generator; neg. photoresist
composition containing)

RN 1886-74-4 CAPLUS

CN Benzene, 1,1'-[(diazomethylene)bis(sulfonyl)]bis- (9CI) (CA INDEX NAME)



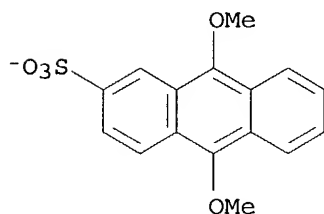
RN 137309-10-5 CAPLUS

CN Sulfonium, triphenyl-, salt with 9,10-dimethoxy-2-anthracenesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 137308-85-1

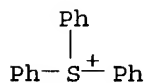
CMF C16 H13 O5 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



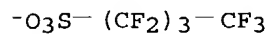
RN 144317-44-2 CAPLUS

CN Sulfonium, triphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-
butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 45187-15-3

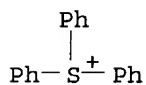
CMF C4 F9 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



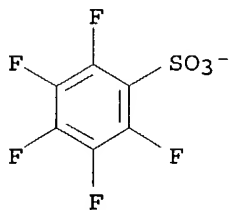
RN 153698-46-5 CAPLUS

CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1)
(9CI) (CA INDEX NAME)

CM 1

CRN 46377-88-2

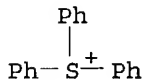
CMF C6 F5 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



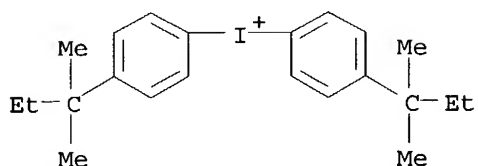
RN 258341-98-9 CAPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

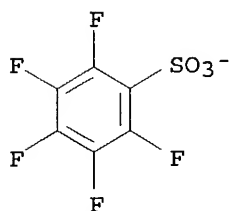
CMF C22 H30 I



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



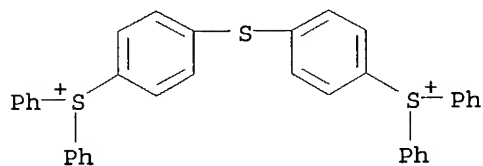
RN 270563-96-7 CAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with pentafluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 74227-34-2

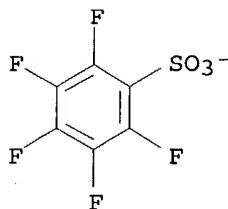
CMF C36 H28 S3



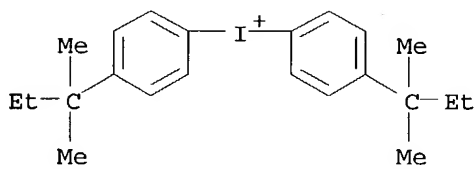
CM 2

CRN 46377-88-2

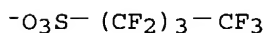
CMF C6 F5 O3 S



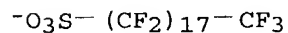
RN 312386-77-9 CAPLUS
 CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with
 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX
 NAME)
 CM 1
 CRN 249300-51-4
 CMF C22 H30 I



CM 2
 CRN 45187-15-3
 CMF C4 F9 O3 S



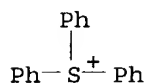
RN 328006-70-8 CAPLUS
 CN Sulfonium, triphenyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,
 11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-heptatriacontafuoro-1-
 octadecanesulfonic acid (1:1) (9CI) (CA INDEX NAME)
 CM 1
 CRN 328006-69-5
 CMF C18 F37 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



IT 29420-49-3, Potassium nonafluorobutanesulfonate

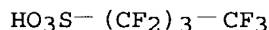
RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of acid generator for neg.

photoresist composition)

RN 29420-49-3 CAPLUS

CN 1-Butanesulfonic acid, 1,1,2,2,3,3,4,4,4-nonafluoro-, potassium salt (8CI, 9CI) (CA INDEX NAME)



● K

IC ICM G03F007-038

NCL 430270100; 430302000

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 38, 76

ST neg photoresist compn photolithog

IT Negative photoresists

(neg. photoresist composition)

IT Photolithography

(neg. photoresist composition for)

IT 1886-74-4 137309-10-5 144317-44-2

153698-46-5 171417-91-7 258341-98-9

270563-96-7 312386-77-9 328006-70-8

543700-40-9 660859-78-9 660859-79-0

RL: TEM (Technical or engineered material use); USES (Uses)

(acid generator; neg. photoresist

composition containing)

IT 161679-94-3P 184877-60-9P 185502-14-1P 197087-74-4P 421546-91-0P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(cross linking agent; neg. photoresist composition

containing)

IT 140-95-4 4211-44-3 4356-60-9 17464-88-9 70587-55-2 112288-39-8

RL: TEM (Technical or engineered material use); USES (Uses)

(cross linking agent; neg. photoresist composition containing)

IT 173786-80-6P, 4-Acetoxystyrene-4-methoxystyrene copolymer
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
 (neg. photoresist composition containing)

IT 29420-49-3, Potassium nonafluorobutanesulfonate 660859-77-8
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of acid generator for neg. photoresist composition)

IT 110726-28-8, 1[α -Methyl- α -(4-hydroxyphenyl)ethyl]-4-[(α , α -bis(4-hydroxyphenyl)ethyl)benzene
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of cross linking agent for neg. photoresist composition)

IT 162846-57-3P
 RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
 (preparation of cross linking agent for neg. photoresist composition)

IT 24979-69-9 24979-70-2 24979-74-6 31853-85-7 149614-53-9
 171429-59-7 185405-14-5 321164-59-4 345212-27-3 345212-56-8
 349619-68-7
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (resin; neg. photoresist composition containing)

L51 ANSWER 6 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2004:18781 CAPLUS

DOCUMENT NUMBER: 140:84637

TITLE: Resist composition

INVENTOR(S): Takahashi, Hyou; Yasunami, Shoichiro; Mizutani, Kazuyoshi

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: U.S. Pat. Appl. Publ., 47 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

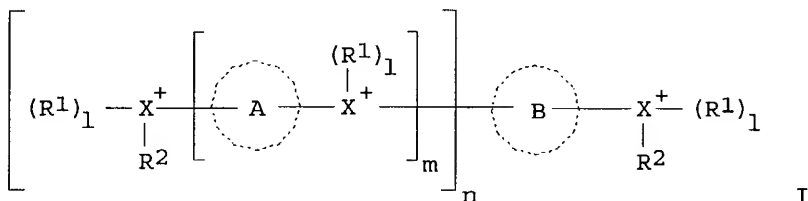
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004005513	A1	20040108	US 2003-606845	20030627
JP 2004086188	A2	20040318	JP 2003-185174	20030627
PRIORITY APPLN. INFO.:			JP 2002-190581 A	20020628
OTHER SOURCE(S):	MARPAT 140:84637			

GI



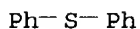
AB The **resist composition** of the present invention, ensuring excellent pattern profile and excellent isolation performance for use in the pattern formation by the irradiation of actinic rays or radiation, particularly, electron beam, X ray or EUV light, which comprising (A) a compound having a specific partial structure represented by I [X = sulfur atom, iodine atom; R¹, R² = alkyl, aryl; A, B = hydrocarbon structure; l = 0, 1; m = 0-10; n = 1-5] and a counter ion, the compound **generating** an **acid** upon irradiation of actinic rays or radiation, (B) an alkali-soluble resin, and (C) a **crosslinking** agent of undergoing an addnl. reaction with the alkali-soluble resin.

IT 139-66-2, Diphenylsulfide 536-80-1, Iodosyl benzene
1493-13-6, Trifluoromethanesulfonic acid

RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of **acid generator** for **resist composition** showing excellent pattern profile and isolation performance)

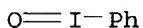
RN 139-66-2 CAPLUS

CN Benzene, 1,1'-thiobis- (9CI) (CA INDEX NAME)



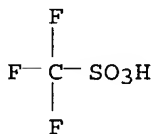
RN 536-80-1 CAPLUS

CN Benzene, iodosyl- (9CI) (CA INDEX NAME)



RN 1493-13-6 CAPLUS

CN Methanesulfonic acid, trifluoro- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM G03C001-492
ICS G03C001-494; G03C001-76

NCL 430270100

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76

ST **resist compn acid generator**
photoresist electron beam x ray

IT **Photoresists**
(UV; **resist composition** showing excellent pattern profile and isolation performance)

IT Electron beam **resists**
X-ray **resists**
(**resist composition** showing excellent pattern profile and isolation performance)

IT 326591-96-2P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**
(acid decomposable resin; **resist composition** showing excellent pattern profile and isolation performance)

IT 129674-22-2 158593-28-3 159296-87-4 177034-75-2 200808-68-0
279244-37-0 288620-13-3 372968-15-5 610301-50-3
RL: TEM (Technical or engineered material use); **USES (Uses)**
(acid decomposable resin; **resist composition** showing excellent pattern profile and isolation performance)

IT 144767-83-9P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**
(**acid generator**; **resist composition** showing excellent pattern profile and isolation performance)

IT 100093-00-3 641638-14-4 641638-15-5 641638-16-6 641638-17-7
641638-19-9 641638-21-3 641638-23-5 641638-24-6 641638-26-8
641638-27-9 641638-28-0 641638-30-4 641638-32-6
RL: TEM (Technical or engineered material use); **USES (Uses)**
(**acid generator**; **resist composition** showing excellent pattern profile and isolation performance)

IT 173786-80-6P, 4-Acetoxystyrene-4-methoxystyrene copolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**
(alkali-soluble resin; **resist composition** showing excellent pattern profile and isolation performance)

IT 24979-69-9 24979-70-2 24979-73-5 24979-74-6 149614-53-9
171429-59-7 185405-14-5 204065-67-8 219838-71-8 321164-59-4
345212-27-3 345212-59-1 349619-68-7 354589-43-8 396098-38-7
473313-52-9 575464-71-0
RL: TEM (Technical or engineered material use); **USES (Uses)**
(alkali-soluble resin; **resist composition** showing excellent pattern profile and isolation performance)

IT 161679-94-3P 185502-14-1P 185502-15-2P 197087-74-4P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**
(**crosslinking agent** for **resist composition**)

- showing excellent pattern profile and isolation performance)
- IT 3089-11-0
RL: TEM (Technical or engineered material use); USES (Uses)
(**crosslinking agent for resist composition**
showing excellent pattern profile and isolation performance)
- IT 102-82-9, Tri-n-butylamine 484-47-9, 2,4,5-Triphenylimidazole
1122-58-3, 4-Dimethylaminopyridine 3001-72-7, 1,5-Diazabicyclo(4.3.0)non-
5-ene
RL: TEM (Technical or engineered material use); USES (Uses)
(nitrogen-containing basic compound for **resist composition**
showing excellent pattern profile and isolation performance)
- IT 71-43-2, Benzene, reactions 139-66-2, Diphenylsulfide
536-80-1, Iodosyl benzene 1493-13-6,
Trifluoromethanesulfonic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of **acid generator for resist composition** showing excellent pattern profile and isolation
performance)
- IT 138996-14-2P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(**Preparation**); RACT (Reactant or reagent)
(preparation of **acid generator for resist composition** showing excellent pattern profile and isolation
performance)
- IT 50-00-0, Formalin, reactions 141-78-6, Ethyl acetate, reactions
110726-28-8, Trisp-PA 161679-95-4 161679-98-7 197087-73-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of **crosslinking agent for resist composition** showing excellent pattern profile and isolation
performance)
- IT 162846-57-3P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(**Preparation**); RACT (Reactant or reagent)
(preparation of **crosslinking agent for resist composition** showing excellent pattern profile and isolation
performance)

L51 ANSWER 7 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:943410 CAPLUS

DOCUMENT NUMBER: 140:10630

TITLE: Hydroxystyrene-based polymer **compositions**
and their positively or negatively working
photosensitive **compositions** for chemically
amplified **resists**

INVENTOR(S): Kawabe, Masanao

PATENT ASSIGNEE(S): Nippon Steel Chemical Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003342433	A2	20031203	JP 2002-152639	20020527

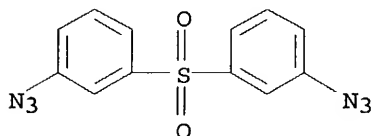
PRIORITY APPLN. INFO.: JP 2002-152639 20020527

AB The **compns.** with excellent heat resistance, sensitivity, and resolution contain (A) hydroxystyrene-based polymers (HSP) involving repeating unit CH₂CHC₆H₄OH (I), with tacticity of C1 carbon in the Ph group being ≥30% on racemic pentad by ¹³C-NMR and (B) atactic HSP involving the repeating unit I, with tacticity of C1 carbon in the Ph group being <30% on racemic pentad by ¹³C-NMR and meso pentad ratio <30% at ratio A:B = 1:99-99:1. The pos. photosensitive **compns.** contain the HSP **compns.** and photodecomposing photosensitive components, preferably, quinonediazides. In another alternative, the photosensitive **compns.** contain the HSP **compns.** and azides. The neg. photosensitive **compns.** contain HSP **compns.**, acid generators, and crosslinking agents.

IT 75742-13-1, 3,3'-Diazidodiphenyl sulfone
 RL: MOA (Modifier or additive use); USES (Uses)
 (hydroxystyrene-based polymer **compns.** for pos. or neg. working photosensitive **compns.** for chemical amplified **resists**)

RN 75742-13-1 CAPLUS

CN Benzene, 1,1'-sulfonylbis[3-azido- (9CI) (CA INDEX NAME)]



IT 68510-93-0, 2,3,4-Trihydroxybenzophenone-1,2-naphthoquinonediazide-[2]-5-sulfonic acid ester
 RL: MOA (Modifier or additive use); USES (Uses)
 (photodecomposing photosensitive component; hydroxystyrene-based polymer **compns.** for pos. or neg. working photosensitive **compns.** for chemical amplified **resists**)

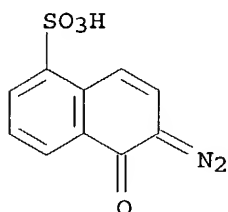
RN 68510-93-0 CAPLUS

CN 1-Naphthalenesulfonic acid, 6-diazo-5,6-dihydro-5-oxo-, ester with phenyl(2,3,4-trihydroxyphenyl)methanone (9CI) (CA INDEX NAME)

CM 1

CRN 20546-03-6

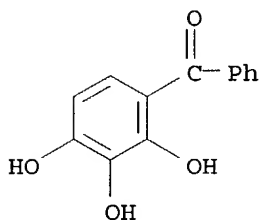
CMF C10 H6 N2 O4 S



CM 2

CRN 1143-72-2

CMF C13 H10 O4



- IC ICM C08L025-18
ICS C08K005-28; G03F007-008; G03F007-022; G03F007-033; G03F007-038;
H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)
Section cross-reference(s): 38
- ST hydroxystyrene polymer **compn** chem amplified **resist**;
syndiotactic atactic blend hydroxystyrene polymer **compn**; neg
deep UV **resist** hydroxystyrene polymer; electron beam
resist neg hydroxystyrene polymer; x ray **resist** neg
hydroxystyrene polymer; quinonediazide pos photosensitive hydroxystyrene
polymer **compn**
- IT **Photoresists**
(hydroxystyrene-based polymer **compns.** for pos. or neg.
working photosensitive **compns.** for chemical amplified
resists)
- IT Electron beam **resists**
(neg.-working; hydroxystyrene-based polymer **compns.** for pos.
or neg. working photosensitive **compns.** for chemical amplified
resists)
- IT X-ray **resists**
(neg.; hydroxystyrene-based polymer **compns.** for pos. or neg.
working photosensitive **compns.** for chemical amplified
resists)
- IT 519040-45-0P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM

(Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**
 (blend with atactic poly(4-hydroxystyrene); hydroxystyrene-based polymer **compns.** for pos. or neg. working photosensitive **compns.** for chemical amplified **resists**)

IT 24979-70-2
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); **USES (Uses)**
 (blend with syndiotactic poly(4-hydroxystyrene); hydroxystyrene-based polymer **compns.** for pos. or neg. working photosensitive **compns.** for chemical amplified **resists**)

IT 84516-63-2DP, hydrolyzed
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**
 (hydroxystyrene-based polymer **compns.** for pos. or neg. working photosensitive **compns.** for chemical amplified **resists**)

IT 75742-13-1, 3,3'-Diazidodiphenyl sulfone
 RL: MOA (Modifier or additive use); **USES (Uses)**
 (hydroxystyrene-based polymer **compns.** for pos. or neg. working photosensitive **compns.** for chemical amplified **resists**)

IT 68510-93-0, 2,3,4-Trihydroxybenzophenone-1,2-naphthoquinonediazide-[2]-5-sulfonic acid ester
 RL: MOA (Modifier or additive use); **USES (Uses)**
 (photodecomposing photosensitive component; hydroxystyrene-based polymer **compns.** for pos. or neg. working photosensitive **compns.** for chemical amplified **resists**)

L51 ANSWER 8 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:653456 CAPLUS

DOCUMENT NUMBER: 139:171285

TITLE: Negative-working **resist composition** containing sulfonic acid-generating photoacid

INVENTOR(S): Yasunami, Shoichiro; Shirakawa, Hiroshi

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 48 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

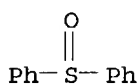
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2003233186	A2	20030822	JP 2002-32806	20020208
PRIORITY APPLN. INFO.:			JP 2002-32806	20020208
OTHER SOURCE(S):	MARPAT 139:171285			

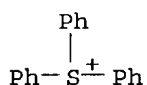
AB The neg.-working **resist composition** comprises (a) an alkali-soluble polymer, (b) a **crosslinker** which **crosslinks**

(a) upon an interaction with an **acid**, (c) a photoacid **generating** sulfonic **acid** represented by Ra-SO₃H (Ra = C₄-30 alkyl, alkenyl, alkynyl), and (d) a photoacid **generating** sulfonic **acid** other than Ra-SO₃H. The neg.-working **resist composition** satisfied all high sensitivity and high resolution, and a line edge roughness.

IT 945-51-7, Diphenylsulfoxide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (neg.-working **resist composition** containing sulfonic **acid-generating** photoacid)
 RN 945-51-7 CAPLUS
 CN Benzene, 1,1'-sulfinylbis- (9CI) (CA INDEX NAME)



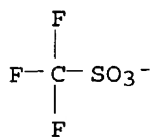
IT 3744-08-9P, Triphenylsulfoniumiodide
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (neg.-working **resist composition** containing sulfonic **acid-generating** photoacid)
 RN 3744-08-9 CAPLUS
 CN Sulfonium, triphenyl-, iodide (8CI, 9CI) (CA INDEX NAME)



IT 66003-78-9 85342-62-7 144089-15-6
 144317-44-2 153698-46-5 197447-16-8
 227199-92-0 258341-98-9 335385-82-5
 349619-84-7
 RL: CAT (Catalyst use); USES (Uses)
 (photoacid; neg.-working **resist composition** containing sulfonic **acid-generating** photoacid)
 RN 66003-78-9 CAPLUS
 CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI)
 (CA INDEX NAME)

CM 1

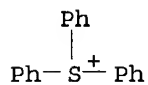
CRN 37181-39-8
 CMF C F3 O3 S



CM 2

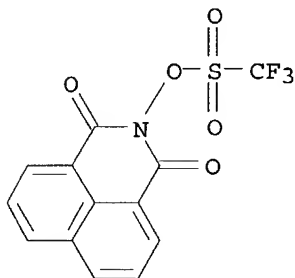
CRN 18393-55-0

CMF C18 H15 S



RN 85342-62-7 CAPLUS

CN 1H-Benz[de]isoquinoline-1,3(2H)-dione, 2-[[(trifluoromethyl) sulfonyl]oxy] -
(9CI) (CA INDEX NAME)



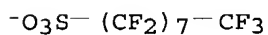
RN 144089-15-6 CAPLUS

CN Sulfonium, triphenyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

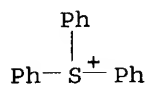
CRN 45298-90-6

CMF C8 F17 O3 S



CM 2

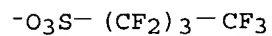
CRN 18393-55-0
CMF C18 H15 S



RN 144317-44-2 CAPLUS
CN Sulfonium, triphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

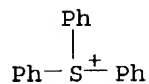
CM 1

CRN 45187-15-3
CMF C4 F9 O3 S



CM 2

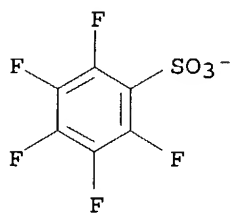
CRN 18393-55-0
CMF C18 H15 S



RN 153698-46-5 CAPLUS
CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

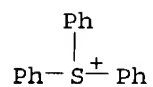
CRN 46377-88-2
CMF C6 F5 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



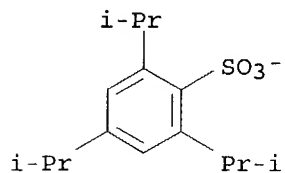
RN 197447-16-8 CAPLUS

CN Sulfonium, triphenyl-, salt with 2,4,6-tris(1-methylethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 46950-23-6

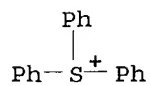
CMF C15 H23 O3 S



CM 2

CRN 18393-55-0

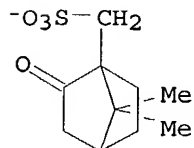
CMF C18 H15 S



RN 227199-92-0 CAPLUS
 CN Sulfonium, triphenyl-, salt with 7,7-dimethyl-2-oxobicyclo[2.2.1]heptane-1-methanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

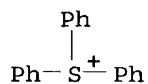
CM 1

CRN 55077-28-6
 CMF C10 H15 O4 S



CM 2

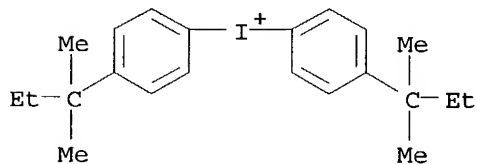
CRN 18393-55-0
 CMF C18 H15 S



RN 258341-98-9 CAPLUS
 CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

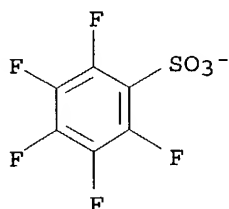
CM 1

CRN 249300-51-4
 CMF C22 H30 I

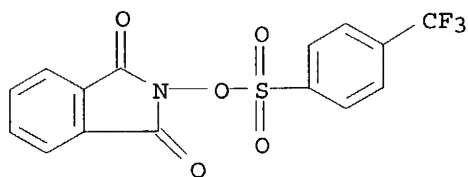


CM 2

CRN 46377-88-2
 CMF C6 F5 O3 S



RN 335385-82-5 CAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 2-[[[4-(trifluoromethyl)phenyl]sulfonyl]oxy]-(9CI) (CA INDEX NAME)

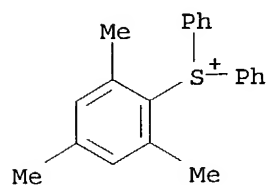


RN 349619-84-7 CAPLUS
 CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with 2-nitro-4-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47191-44-6

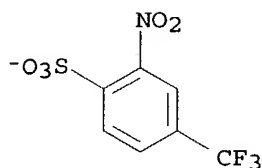
CMF C21 H21 S



CM 2

CRN 46806-65-9

CMF C7 H3 F3 N O5 S



IC ICM G03F007-038
ICS H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 25, 35, 38

ST **resist photoresist compn sulfonic acid generator photoacid**

IT **Photoresists**
Resists
(neg.-working **resist composition** containing sulfonic **acid-generating** photoacid)

IT 161679-94-3P 161679-95-4P 161679-98-7P 162846-57-3P 185502-11-8P
185502-14-1P 185502-15-2P 197087-73-3P 197087-74-4P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**crosslinker**; neg.-working **resist composition** containing sulfonic **acid-generating** photoacid)

IT 3089-11-0 32449-09-5
RL: TEM (Technical or engineered material use); USES (Uses)
(**crosslinker**; neg.-working **resist composition** containing sulfonic **acid-generating** photoacid)

IT 75-59-2, Tetramethylammonium hydroxide **945-51-7**,
Diphenylsulfoxide 41911-50-6, Hexadecanesulfonyl chloride 110726-28-8,
Trisp-PA
RL: RCT (Reactant); RACT (Reactant or reagent)
(neg.-working **resist composition** containing sulfonic **acid-generating** photoacid)

IT **3744-08-9P**, Triphenylsulfoniumiodide 575464-70-9P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(neg.-working **resist composition** containing sulfonic **acid-generating** photoacid)

IT 173786-80-6P, 4-Acetoxyystyrene-4-methoxystyrene copolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(neg.-working **resist composition** containing sulfonic **acid-generating** photoacid)

IT 24979-69-9, 3-Hydroxystyrene homopolymer 24979-70-2, 4-Hydroxystyrene homopolymer 24979-73-5 24979-74-6 149614-53-9 171429-59-7
185405-14-5 204065-67-8 219838-71-8 321164-59-4 345212-27-3
345212-56-8 349619-68-7 354589-43-8 396098-38-7 575464-71-0
RL: TEM (Technical or engineered material use); USES (Uses)
(neg.-working **resist composition** containing sulfonic

acid-generating photoacid)
 IT 58113-98-7 66003-78-9 85342-62-7 144089-15-6
 144317-44-2 153698-46-5 160509-80-8
 197447-16-8 227199-92-0 258341-98-9
 335385-82-5 349619-84-7 398457-16-4 475642-50-3
 543700-40-9 575464-72-1 575464-73-2 575464-74-3 575464-76-5
 575464-78-7 575464-79-8 575464-81-2 575464-82-3 575464-83-4
 575464-84-5 575464-85-6 575464-86-7 575464-87-8 575464-89-0
 RL: CAT (Catalyst use); USES (Uses)
 (photoacid; neg.-working resist composition containing
 sulfonic acid-generating photoacid)

L51 ANSWER 9 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2003:77397 CAPLUS
 DOCUMENT NUMBER: 138:129017
 TITLE: Negative type radiation sensitive resin
 composition
 INVENTOR(S): Kai, Toshiyuki; Ichinohe, Daigo
 PATENT ASSIGNEE(S): Japan
 SOURCE: U.S. Pat. Appl. Publ., 17 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003022095	A1	20030130	US 2002-171583	20020617
JP 2003076019	A2	20030314	JP 2001-262027	20010830
PRIORITY APPLN. INFO.:			JP 2001-182897	A 20010618
			JP 2001-262027	A 20010830

AB A neg. type radiation sensitive resin **composition** comprises: (A) an alkali-soluble resin containing the polymerized unit of a polymerizable unsatd. compound having a phenolic hydroxyl group and having a weight average mol. weight of 4,100-20,000 and a weight average mol. weight/number average mol. weight ratio of more than

1.25-2.00; (B) a radiation sensitive **acid generating** agent; and (C) an **acid crosslinking** agent. This **composition** can be used with an alkali developer having a normal concentration, can form a high-resolution rectangular line-and-space **resist** pattern, and provides a chemical amplified neg. type **resist** which is free from a **resist** pattern defect (bridging or chip line) after development and has excellent sensitivity, developability and dimensional fidelity.

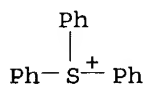
IT 345580-99-6, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (acid dispersion control agent; neg. type radiation sensitive resin
 composition)
 RN 345580-99-6 CAPLUS
 CN Sulfonium, triphenyl-, salt with 2-hydroxybenzoic acid (1:1) (9CI) (CA

INDEX NAME)

CM 1

CRN 18393-55-0

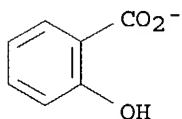
CMF C18 H15 S



CM 2

CRN 63-36-5

CMF C7 H5 O3



IT 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate
133710-62-0 141801-36-7

RL: TEM (Technical or engineered material use); USES (Uses)
(acid generating agent; neg. type radiation
sensitive resin composition)

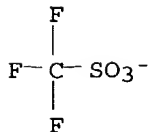
RN 66003-78-9 CAPLUS

CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI)
(CA INDEX NAME)

CM 1

CRN 37181-39-8

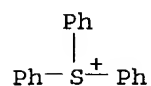
CMF C F3 O3 S



CM 2

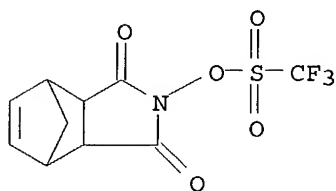
CRN 18393-55-0

CMF C18 H15 S



RN 133710-62-0 CAPLUS

CN 4,7-Methano-1H-isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2-
[[trifluoromethyl)sulfonyl]oxy]- (9CI) (CA INDEX NAME)



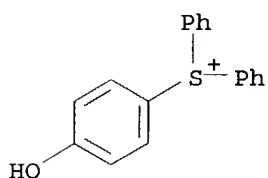
RN 141801-36-7 CAPLUS

CN Sulfonium, (4-hydroxyphenyl)diphenyl-, salt with trifluoromethanesulfonic
acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 108493-51-2

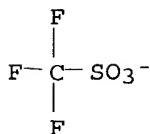
CMF C18 H15 O S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



IC ICM G03F007-004
 NCL 430170000; 430270100; 430325000
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 35, 38
 ST neg **photoresist** resin **compn**
 IT Negative photoresists
 (neg. type radiation sensitive resin **composition**)
 IT 17464-88-9 19576-38-6, 1,3,5-Tris(. α .-hydroxyisopropyl)benzene
 RL: TEM (Technical or engineered material use); USES (Uses)
 (acid **crosslink** agent; neg. type radiation sensitive resin **composition**)
 IT 112-18-5 716-79-0, 2-Phenylbenzimidazole **345580-99-6**, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (acid dispersion control agent; neg. type radiation sensitive resin **composition**)
 IT **66003-78-9**, Triphenylsulfonium trifluoromethanesulfonate
133710-62-0 141801-36-7
 RL: TEM (Technical or engineered material use); USES (Uses)
 (acid **generating** agent; neg. type radiation sensitive resin **composition**)
 IT 95418-59-ODP, p-tert-Butoxystyrene-styrene copolymer, hydrolyzed
 286411-41-4DP, p-tert-Butoxystyrene-p-methoxystyrene copolymer, hydrolyzed
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
 (neg. type radiation sensitive resin **composition** containing)
 IT 97-64-3, Ethyl 2-hydroxypropionate 763-69-9, Ethyl 3-ethoxypropionate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (solvent; neg. type radiation sensitive resin **composition**)

L51 ANSWER 10 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2002:904316 CAPLUS
 DOCUMENT NUMBER: 138:9655
 TITLE: Negative **photoresist** **compositions**,
photoresist films and their use
 INVENTOR(S): Saito, Koji; Misumi, Kouichi; Okui, Toshiki; Komano, Hiroshi
 PATENT ASSIGNEE(S): Tokyo Ohka Kogyo Co., Ltd., Japan
 SOURCE: Ger. Offen., 12 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
DE 10222387	A1	20021128	DE 2002-10222387	20020521
JP 2003043688	A2	20030213	JP 2002-110282	20020412
US 2003064319	A1	20030403	US 2002-147984	20020520
PRIORITY APPLN. INFO.:			JP 2001-151131	A 20010521

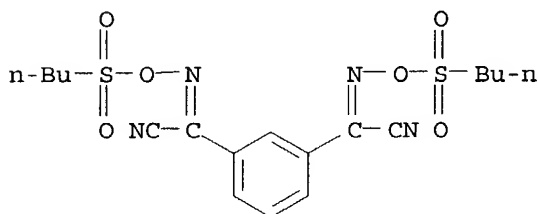
AB The invention relates to a neg. **photoresist composition**, which is used for forming thick films and comprises a novolak resin, a plasticizer, a **crosslinking agent** and an **acid generator**. This **composition** is applied on a substrate and results in a 5-10 μm thick photoresist film. The **composition** is homogeneously applied on a substrate of an electronic part, a mask pattern is formed, the pattern is developed, and finally the pattern is removed.

IT 195394-90-2

RL: TEM (Technical or engineered material use); USES (Uses)
(**acid generator**; neg. **photoresist compns.**, **photoresist** films and their use for electronic device fabrication)

RN 195394-90-2 CAPLUS

CN 1,3-Benzenediacetonitrile, α,α' -bis[[**(butylsulfonyl)oxy**]imino]-
(9CI) (CA INDEX NAME)



IC ICM G03F007-038

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76

ST neg **photoresist compn** thick film **resist**
electronic device fabrication

IT Aminoplasts

RL: TEM (Technical or engineered material use); USES (Uses)
(**crosslinking agent**; neg. **photoresist compns.**, **photoresist** films and their use for electronic device fabrication)

IT **Photoresists**

(dry-film; neg. **photoresist compns.**, **photoresist** films and their use for electronic device fabrication)

IT Electronic device fabrication

Negative **photoresists**

Photolithography

(neg. **photoresist compns.**, **photoresist** films and their use for electronic device fabrication)

IT 195394-90-2

RL: TEM (Technical or engineered material use); USES (Uses)
(**acid generator**; neg. **photoresist compns.**, **photoresist** films and their use for electronic device fabrication)

IT 9003-08-1, Nikalac MW 100

RL: TEM (Technical or engineered material use); USES (Uses)
 (crosslinking agent; neg. **photoresist compns.**, **photoresist** films and their use for electronic device fabrication)

IT 27029-76-1P, m-Cresol-p-cresol-formaldehyde copolymer
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
 (novolak resin; neg. **photoresist compns.**, **photoresist** films and their use for electronic device fabrication)

IT 476489-07-3P, Acrylic acid-benzyl acrylate-2-methoxyethyl acrylate copolymer
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
 (plasticizer; neg. **photoresist compns.**, **photoresist** films and their use for electronic device fabrication)

IT 9003-09-2, Methylvinyl ether polymer 25104-37-4, Ethylvinyl ether polymer
 RL: TEM (Technical or engineered material use); USES (Uses)
 (plasticizer; neg. **photoresist compns.**, **photoresist** films and their use for electronic device fabrication)

L51 ANSWER 11 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2002:253086 CAPLUS
 DOCUMENT NUMBER: 136:301771
 TITLE: Negative resist composition for ultra-microlithography
 INVENTOR(S): Uenishi, Kazuya
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
 SOURCE: Eur. Pat. Appl., 50 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1193555	A1	20020403	EP 2001-120664	20010831
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002148806	A2	20020522	JP 2001-264111	20010831
US 2002061462	A1	20020523	US 2001-942768	20010831
TW 536662	B	20030611	TW 2001-90121630	20010831
PRIORITY APPLN. INFO.:			JP 2000-263815	A 20000831
OTHER SOURCE(S): MARPAT 136:301771				
AB The invention relates to a neg. resist composition suitable for use in ultra-microlithog. for producing VLSI and microchips and other photofabrication processes and in processing semiconductor devices using high-energy beams such as an electron beam. Fine patterns can be formed				

using the **resist composition** in x-ray lithog. The **composition** comprises: an alkali-soluble resin; a compound capable of **generating** an acid upon irradiation; a **crosslinking** agent capable of **crosslinking** by the action of an acid; and a solvent mixture containing: ≥ 1 solvent selected from the group (a) ; and ≥ 1 selected from the group consisting of groups (b) and (c): (a) a propylene glycol monoalkyl ether carboxylate; (b) a propylene glycol monoalkyl ether, an alkyl lactate, an acetic ester, a chain ketone and an alkyl alkoxypropionate; and (c) a γ -butyrolactone, an ethylene carbonate and a propylene carbonate.

IT 66003-78-9P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(acid-generating agent; alkali-soluble resin containing styrene polymer for neg. **photoresist composition** for x-ray/electron-beam lithog.)

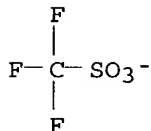
RN 66003-78-9 CAPLUS

CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI)
(CA INDEX NAME)

CM 1

CRN 37181-39-8

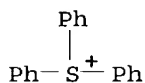
CMF C F3 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



IT 270563-92-3 270563-93-4 270563-96-7
279244-39-2 349619-92-7 349647-26-3

RL: TEM (Technical or engineered material use); USES (Uses)
(acid-generating agent; alkali-soluble resin containing styrene polymer for neg. **photoresist composition** for x-ray/electron-beam lithog.)

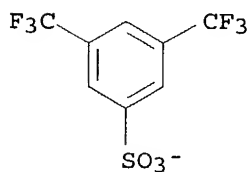
RN 270563-92-3 CAPLUS

CN Sulfonium, bis(4-methylphenyl)phenyl-, salt with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 213740-84-2

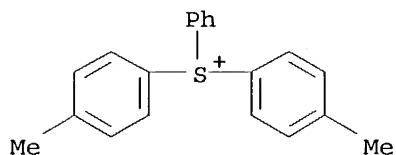
CMF C8 H3 F6 O3 S



CM 2

CRN 70082-58-5

CMF C20 H19 S



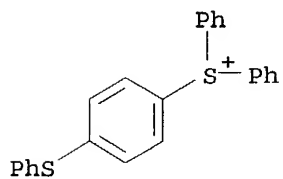
RN 270563-93-4 CAPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

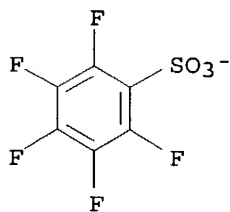
CRN 47480-44-4

CMF C24 H19 S2



CM 2

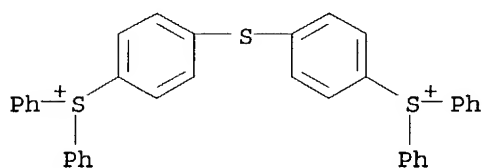
CRN 46377-88-2
CMF C6 F5 O3 S



RN 270563-96-7 CAPLUS
CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
pentafluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

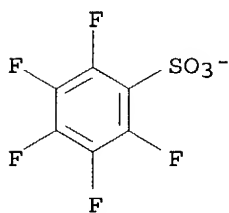
CM 1

CRN 74227-34-2
CMF C36 H28 S3



CM 2

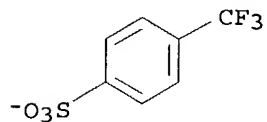
CRN 46377-88-2
CMF C6 F5 O3 S



RN 279244-39-2 CAPLUS
CN Sulfonium, (4-butoxyphenyl)diphenyl-, salt with 4-
(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

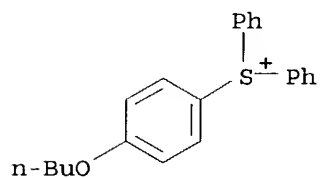
CM 1

CRN 120998-63-2
CMF C7 H4 F3 O3 S



CM 2

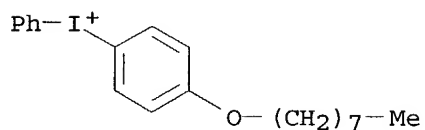
CRN 112406-00-5
CMF C22 H23 O S



RN 349619-92-7 CAPLUS
CN Iodonium, [4-(octyloxy)phenyl]phenyl-, salt with 4-fluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

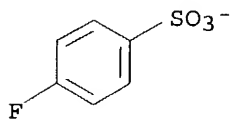
CM 1

CRN 121239-74-5
CMF C20 H26 I O



CM 2

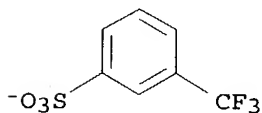
CRN 61657-38-3
CMF C6 H4 F O3 S



RN 349647-26-3 CAPLUS
 CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with
 3-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

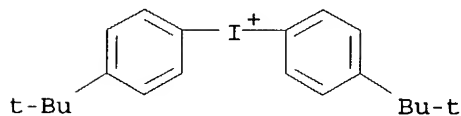
CM 1

CRN 104994-84-5
 CMF C7 H4 F3 O3 S



CM 2

CRN 61267-44-5
 CMF C20 H26 I

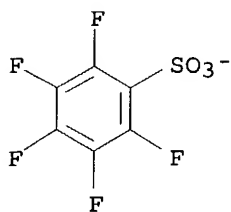


IT 153698-46-5P 258341-98-9P 270564-02-8P
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material
 use); **PREP (Preparation)**; USES (Uses)
 (acid-generating agent; alkali-soluble resin containing
 styrene polymer for neg. **resist composition** for
 x-ray/electron-beam lithog.)

RN 153698-46-5 CAPLUS
 CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1)
 (9CI) (CA INDEX NAME)

CM 1

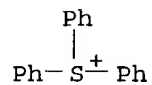
CRN 46377-88-2
 CMF C6 F5 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



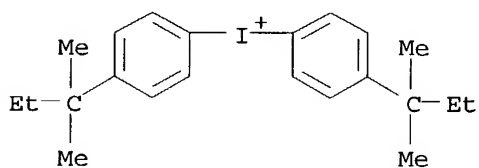
RN 258341-98-9 CAPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

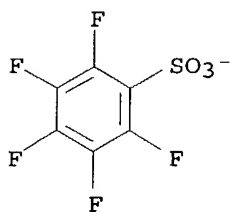
CMF C22 H30 I



CM 2

CRN 46377-88-2

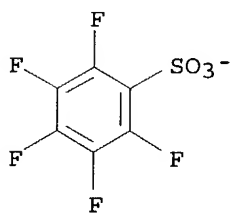
CMF C6 F5 O3 S



RN 270564-02-8 CAPLUS
 CN Methanaminium, N,N,N-trimethyl-, salt with pentafluorobenzenesulfonic acid
 (1:1) (9CI) (CA INDEX NAME)

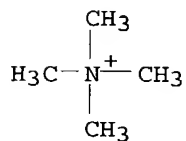
CM 1

CRN 46377-88-2
 CMF C6 F5 O3 S

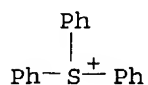


CM 2

CRN 51-92-3
 CMF C4 H12 N



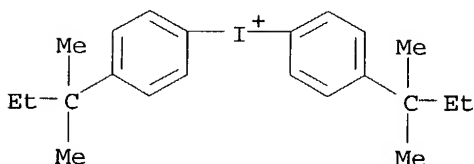
IT 3744-08-9P, Triphenylsulfonium iodide 258342-09-5P
 RL: PNU (Preparation, unclassified); RCT (Reactant); **PREP**
 (**Preparation**); RACT (Reactant or reagent)
 (alkali-soluble resin containing styrene polymer for neg. photoresist
 composition for x-ray/electron-beam lithog.)
 RN 3744-08-9 CAPLUS
 CN Sulfonium, triphenyl-, iodide (8CI, 9CI) (CA INDEX NAME)



RN 258342-09-5 CAPLUS
CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (2:1) (9CI) (CA INDEX NAME)

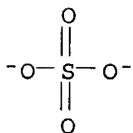
CM 1

CRN 249300-51-4
CMF C22 H30 I

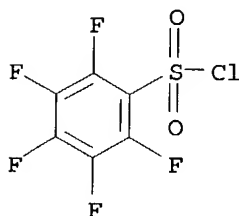


CM 2

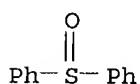
CRN 14808-79-8
CMF O4 S



IT 832-53-1, Pentafluorobenzenesulfonyl chloride 945-51-7,
Diphenyl sulfoxide
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkali-soluble resin containing styrene polymer for neg. photoresist
composition for x-ray/electron-beam lithog.)
RN 832-53-1 CAPLUS
CN Benzenesulfonyl chloride, pentafluoro- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 945-51-7 CAPLUS
CN Benzene, 1,1'-sulfinylbis- (9CI) (CA INDEX NAME)



IC ICM G03F007-004
ICS G03F007-038
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
ST neg photoresist alkali soluble resin **crosslinking** agent
semiconductor device; electron beam lithog microchip photoresist
polystyrene glycol ether surfactant
IT Electron beam lithography
Negative **photoresists**
X-ray lithography
(neg. **photoresist composition** for x-ray/electron-beam lithog. containing alkali-soluble resin and **crosslinking** agent and surfactant)
IT Polysiloxanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(neg. **photoresist composition** for x-ray/electron-beam lithog. containing alkali-soluble resin and **crosslinking** agent and surfactant)
IT Phenolic resins, uses
RL: NUU (Other use, unclassified); USES (Uses)
(novolak; neg. **photoresist composition** for x-ray/electron-beam lithog. containing alkali-soluble resin and **crosslinking** agent and surfactant)
IT Fluoropolymers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(surfactants; neg. **photoresist composition** for x-ray/electron-beam lithog. containing alkali-soluble resin and **crosslinking** agent and surfactant)
IT 66003-78-9P 406913-96-0P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**acid-generating** agent; alkali-soluble resin containing

styrene polymer for neg. **photoresist composition** for x-ray/electron-beam lithog.)

IT 270563-92-3 270563-93-4 270563-96-7
279244-39-2 349619-92-7 349647-26-3
389859-77-2 398457-16-4 406914-01-0
RL: TEM (Technical or engineered material use); USES (Uses)
(**acid-generating** agent; alkali-soluble resin containing styrene polymer for neg. **photoresist composition** for x-ray/electron-beam lithog.)

IT 153698-46-5P 258341-98-9P 270564-02-8P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**acid-generating** agent; alkali-soluble resin containing styrene polymer for neg. **resist composition** for x-ray/electron-beam lithog.)

IT 3744-08-9P, Triphenylsulfonium iodide 258342-09-5P
RL: PNU (Preparation, unclassified); RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(alkali-soluble resin containing styrene polymer for neg. **photoresist composition** for x-ray/electron-beam lithog.)

IT 75-59-2, Tetramethylammonium hydroxide 832-53-1, Pentafluorobenzenesulfonyl chloride 945-51-7, Diphenyl sulfoxide 2049-95-8, tert-Amylbenzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkali-soluble resin containing styrene polymer for neg. **photoresist composition** for x-ray/electron-beam lithog.)

IT 24979-69-9P 24979-70-2P 24979-73-5P 27029-76-1P 149614-53-9P
349619-43-8P 349619-47-2P 349619-51-8P 349619-56-3P 349619-61-0P
349619-65-4P 349619-68-7P 349619-72-3P 349619-76-7P 349619-80-3P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(alkali-soluble resin containing styrene polymer for neg. **resist composition** for x-ray/electron-beam lithog.)

IT 3089-11-0P 109185-69-5P 185502-11-8P 185502-14-1P 185502-15-2P
197087-74-4P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**crosslinking** agent; alkali-soluble resin containing styrene polymer for neg. **photoresist composition** for x-ray/electron-beam lithog.)

IT 161679-94-3P 162846-57-3P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**crosslinking** agent; alkali-soluble resin containing styrene polymer for neg. **resist composition** for x-ray/electron-beam lithog.)

IT 110726-28-8, Trisp-Pa
RL: RCT (Reactant); RACT (Reactant or reagent)
(formylation; alkali-soluble resin containing styrene polymer for neg. **photoresist composition** for x-ray/electron-beam lithog.)

IT 96-48-0 96-49-1, 1,3-Dioxolan-2-one 97-64-3 108-32-7 763-69-9
1320-67-8 84540-57-8 98516-33-7

RL: TEM (Technical or engineered material use); USES (Uses)
 (neg. **photoresist composition** for x-ray/electron-beam
 lithog. containing alkali-soluble resin and **crosslinking** agent and
 solvent mixture containing)

IT 484-47-9

RL: TEM (Technical or engineered material use); USES (Uses)
 (neg. **photoresist composition** for x-ray/electron-beam
 lithog. containing alkali-soluble resin and **crosslinking** agent and
 surfactant)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 12 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:90553 CAPLUS

DOCUMENT NUMBER: 136:126568

TITLE: Antireflective coating **compositions**
 comprising photoacid generators

INVENTOR(S): Pavelchek, Edward K.; Docanto, Manuel

PATENT ASSIGNEE(S): Shipley Company, L.L.C., USA

SOURCE: U.S. Pat. Appl. Publ., 12 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002012875	A1	20020131	US 2001-904587	20010714
PRIORITY APPLN. INFO.:			US 2001-904587	20010714

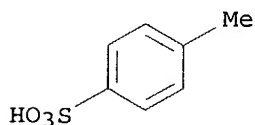
AB The invention provides new light absorbing **crosslinking**
compns. suitable for use as an antireflective **composition**,
 particularly for deep UV applications. The antireflective **compns**
 . of the invention comprise a photoacid generator that is activated during
 exposure of an overcoated photoresist. Antireflective **compns.**
 of the invention can significantly reduce undesired footing of an
 overcoated **resist** relief image.

IT 104-15-4, p-Toluene sulfonic acid, uses 68958-61-2, FC
 171

RL: TEM (Technical or engineered material use); USES (Uses)
 (antireflective coating **compns.** comprising)

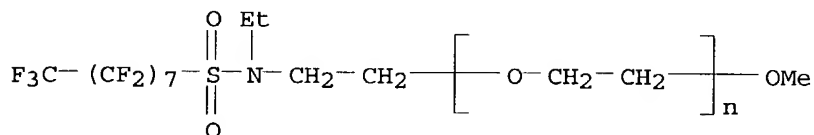
RN 104-15-4 CAPLUS

CN Benzenesulfonic acid, 4-methyl- (9CI) (CA INDEX NAME)



RN 68958-61-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[2-[ethyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl]- ω -methoxy- (9CI) (CA INDEX NAME)



IT 193345-23-2P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(photoacid generators; antireflective coating compns. comprising)

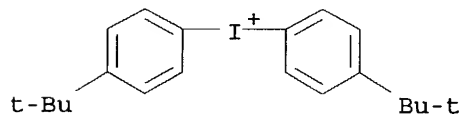
RN 193345-23-2 CAPLUS

CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with
7,7-dimethyl-2-oxobicyclo[2.2.1]heptane-1-methanesulfonic acid (1:1) (9CI)
(CA INDEX NAME)

CM 1

CRN 61267-44-5

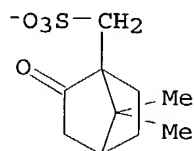
CMF C20 H26 I



CM 2

CRN 55077-28-6

CMF C10 H15 O4 S



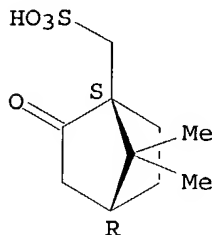
IT 3144-16-9, (+/-)-10-Camphorsulfonic acid

RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of photoacid generators for antireflective coating compns.)

RN 3144-16-9 CAPLUS

CN Bicyclo[2.2.1]heptane-1-methanesulfonic acid, 7,7-dimethyl-2-oxo-,
(1S,4R) - (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



- IC G03F007-26
NCL 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST antireflective coating **crosslinker** photoacid photoresist
IT Photolithography
(UV; photoacid generators containing antireflective coating **compns** . for **photoresist** patterning)
IT Phenolic resins, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(novolak, resin binder, hydroxy group modified; antireflective coating **compns.** comprising)
IT Photoresists
(photoacid generators containing antireflective coating **compns.** for)
IT Antireflective films
(photoacid generators containing antireflective coating **compns.** for **photoresist** patterning)
IT 104-15-4, p-Toluene sulfonic acid, uses 4450-68-4, p-Nitrobenzyl tosylate 68958-61-2, FC 171
RL: TEM (Technical or engineered material use); USES (Uses)
(antireflective coating **compns.** comprising)
IT 17464-88-9, Powderlink 1174
RL: TEM (Technical or engineered material use); USES (Uses)
(**crosslinker**; antireflective coating **compns.** comprising)
IT 193345-23-2P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(photoacid generators; antireflective coating **compns.** comprising)
IT 98-06-6 3144-16-9, (+/-)-10-Camphorsulfonic acid
7758-05-6, Potassium iodate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of photoacid **generators** for antireflective coating **compns.**)

IT 161065-83-4P, 9-Anthrylmethyl methacrylate-2-hydroxyethyl methacrylate copolymer
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (resin bender; antireflective coating compns. comprising)

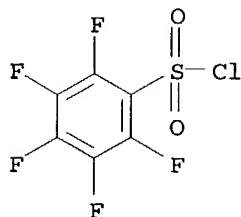
L51 ANSWER 13 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2002:26267 CAPLUS
 DOCUMENT NUMBER: 136:93496
 TITLE: Electron beam- or x-ray-sensitive chemically amplified negative-working photoresist composition for semiconductor device fabrication
 INVENTOR(S): Aogo, Toshiaki
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 47 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002006491	A2	20020109	JP 2000-193140	20000627
PRIORITY APPLN. INFO.:			JP 2000-193140	20000627

AB The title **composition** contains an electron beam- or x-ray sensitive **acid generator**, a resin, which has ≥ 1 unsat. groups for acid- or radical-initiated polymerization and which becomes soluble in an alkali solution, an acid-sensitive **crosslinking** agent, and a fluoro- or silicone surfactant. The **composition** provides the good resolution, the high sensitivity, and the good pattern profile.

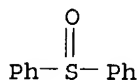
IT 832-53-1, Pentafluorobenzenesulfonyl chloride 945-51-7, Diphenyl sulfoxide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (acid generator in chemical amplified neg.-working photoresist composition)

RN 832-53-1 CAPLUS
 CN Benzenesulfonyl chloride, pentafluoro- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 945-51-7 CAPLUS

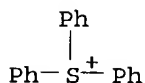
CN Benzene, 1,1'-sulfinylbis- (9CI) (CA INDEX NAME)



IT 3744-08-9, Triphenylsulfonium iodide
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (acid generator in chemical amplified neg.-working photoresist composition)

RN 3744-08-9 CAPLUS

CN Sulfonium, triphenyl-, iodide (8CI, 9CI) (CA INDEX NAME)



IT 258341-98-9 270564-02-8, Tetramethylammonium pentafluorobenzenesulfonate 279218-84-7, Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (1:1)
 RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (acid generator in chemical amplified neg.-working photoresist composition)

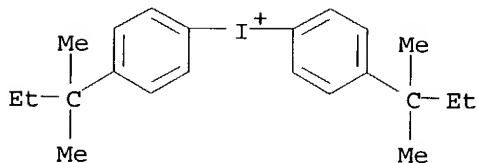
RN 258341-98-9 CAPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

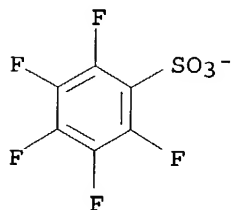
CMF C22 H30 I



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



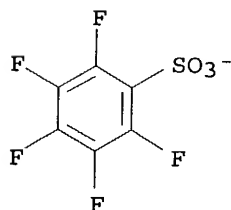
RN 270564-02-8 CAPLUS

CN Methanaminium, N,N,N-trimethyl-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 46377-88-2

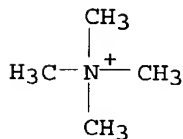
CMF C6 F5 O3 S



CM 2

CRN 51-92-3

CMF C4 H12 N



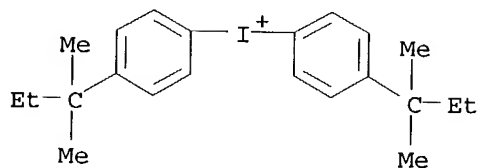
RN 279218-84-7 CAPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

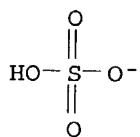
CMF C22 H30 I



CM 2

CRN 14996-02-2

CMF H O4 S

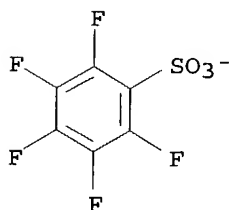


IT 153698-46-5, Triphenylsulfonium pentafluorobenzenesulfonate
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
 (acid generator in chemical amplified neg.-working photoresist composition)
 RN 153698-46-5 CAPLUS
 CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1)
 (9CI) (CA INDEX NAME)

CM 1

CRN 46377-88-2

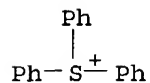
CMF C6 F5 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



IT 270563-93-4 270563-96-7 279244-39-2
279244-43-8 349647-26-3

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acid generator in electron beam- or
x-ray-sensitive chemical amplified neg.-working photoresist
composition)

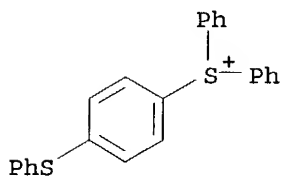
RN 270563-93-4 CAPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47480-44-4

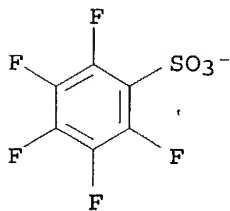
CMF C24 H19 S2



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S

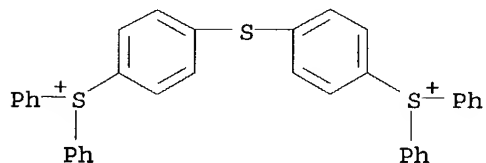


RN 270563-96-7 CAPLUS
 CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
 pentafluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 74227-34-2

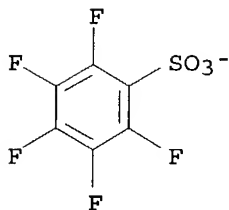
CMF C36 H28 S3



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S

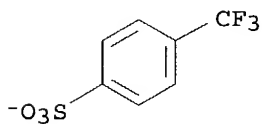


RN 279244-39-2 CAPLUS
 CN Sulfonium, (4-butoxyphenyl)diphenyl-, salt with 4-
 (trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 120998-63-2

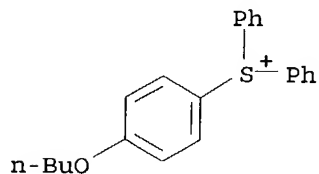
CMF C7 H4 F3 O3 S



CM 2

CRN 112406-00-5

CMF C22 H23 O S



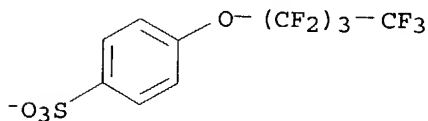
RN 279244-43-8 CAPLUS

CN Sulfonium, (oxydi-4,1-phenylene)bis[diphenyl-, salt with
4-(nonafluorobutoxy)benzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 279244-42-7

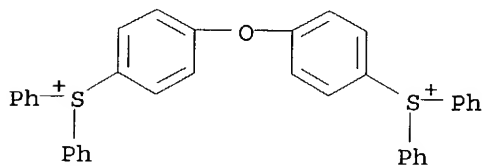
CMF C10 H4 F9 O4 S



CM 2

CRN 279244-41-6

CMF C36 H28 O S2



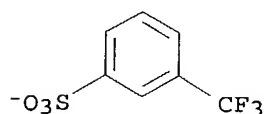
RN 349647-26-3 CAPLUS

CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with
3-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 104994-84-5

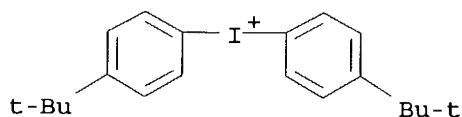
CMF C7 H4 F3 O3 S



CM 2

CRN 61267-44-5

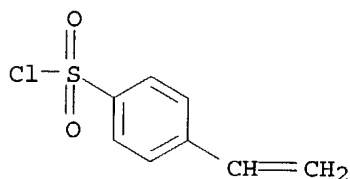
CMF C20 H26 I



IT 2633-67-2D, 4-Styrenesulfonyl chloride, reaction product with hydroxystyrene polymer
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (resin in chemical amplified neg.-working photoresist composition)

RN 2633-67-2 CAPLUS

CN Benzenesulfonyl chloride, 4-ethenyl- (9CI) (CA INDEX NAME)



IT 349647-12-7 349647-16-1
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (resin in electron beam- or x-ray-sensitive chemical amplified neg.-working photoresist composition)

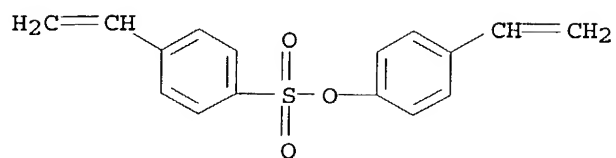
RN 349647-12-7 CAPLUS

CN Benzenesulfonic acid, 4-ethenyl-, 4-ethenylphenyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 349647-11-6

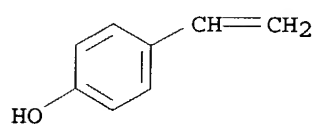
CMF C16 H14 O3 S



CM 2

CRN 2628-17-3

CMF C8 H8 O



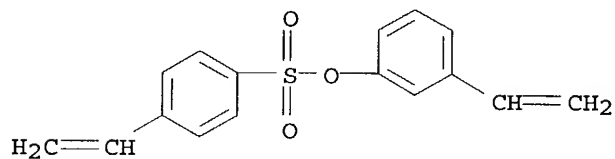
RN 349647-16-1 CAPLUS

CN Benzenesulfonic acid, 4-ethenyl-, 3-ethenylphenyl ester, polymer with 3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 349647-15-0

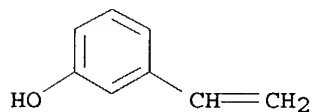
CMF C16 H14 O3 S



CM 2

CRN 620-18-8

CMF C8 H8 O



IC ICM G03F007-038

ICS C08F002-50; C08F012-34; C08F016-12; C08F016-36; C08F020-10;

- C08F020-54; C08F022-30; C08F028-02; C08F290-00; C08F290-12;
C08F299-00; G03F007-004; G03F007-027; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)
Section cross-reference(s): 76
- ST electron beam x ray sensitive neg working **photoresist**
compn
- IT Ion beam **resists**
Semiconductor device fabrication
X-ray **resists**
(electron beam- or x-ray-sensitive neg.-working **photoresist**
composition)
- IT 75-59-2, Tetramethylammonium hydroxide 832-53-1,
Pentafluorobenzenesulfonyl chloride 945-51-7, Diphenyl sulfoxide
2049-95-8, tert-Amylbenzene 7664-93-9, Sulfuric acid,
reactions 7758-05-6, Potassium iodate 12027-06-4, Ammonium iodide
RL: RCT (Reactant); RACT (Reactant or reagent)
(acid generator in chemical amplified neg.-working
photoresist composition)
- IT 3744-08-9, Triphenylsulfonium iodide
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(acid generator in chemical amplified neg.-working
photoresist composition)
- IT 258341-98-9 270564-02-8, Tetramethylammonium
pentafluorobenzenesulfonate 279218-84-7, Iodonium,
bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (1:1)
RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or
engineered material use); **PREP (Preparation)**; RACT (Reactant or
reagent); USES (Uses)
(acid generator in chemical amplified neg.-working
photoresist composition)
- IT 153698-46-5, Triphenylsulfonium pentafluorobenzenesulfonate
RL: SPN (Synthetic preparation); TEM (Technical or engineered material
use); **PREP (Preparation)**; USES (Uses)
(acid generator in chemical amplified neg.-working
photoresist composition)
- IT 270563-93-4 270563-96-7 279244-39-2
279244-43-8 349647-26-3
RL: SPN (Synthetic preparation); TEM (Technical or engineered material
use); **PREP (Preparation)**; USES (Uses)
(acid generator in electron beam- or
x-ray-sensitive chemical amplified neg.-working **photoresist**
composition)
- IT 50-00-0, Formaldehyde, reactions 67-56-1, Methanol, reactions
110726-28-8, Tris-PA
RL: RCT (Reactant); RACT (Reactant or reagent)
(**crosslinking** agent in electron beam- or x-ray-sensitive
chemical amplified neg.-working **photoresist composition**)
- IT 162846-57-3
RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or
engineered material use); **PREP (Preparation)**; RACT (Reactant or

reagent); USES (Uses)
 (crosslinking agent in electron beam- or x-ray-sensitive
 chemical amplified neg.-working photoresist composition)

IT 3089-11-0 32449-09-5 161679-94-3 185502-15-2 197087-74-4
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (crosslinking agent in electron beam- or x-ray-sensitive
 chemical amplified neg.-working photoresist composition)

IT 2633-67-2D, 4-Styrenesulfonyl chloride, reaction product with
 hydroxystyrene polymer 24979-70-2D, Vp 8000, reaction product with
 olefinic compound 30030-25-2D, reaction product with hydroxystyrene
 polymer 30674-80-7D, 2-Isocyanatoethyl methacrylate, reaction product
 with hydroxystyrene polymer 54175-13-2
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (resin in chemical amplified neg.-working photoresist
 composition)

IT 349647-08-1 349647-10-5 349647-12-7 349647-14-9
 349647-16-1 349647-18-3 349647-19-4 349647-21-8
 349647-23-0 349652-45-5 349652-47-7 349652-48-8
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (resin in electron beam- or x-ray-sensitive chemical amplified
 neg.-working photoresist composition)

L51 ANSWER 14 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:814259 CAPLUS

DOCUMENT NUMBER: 135:364513

TITLE: Positive-working alkali-soluble photoresist
 composition, substrate having photosensitive
 film, and formation of photoresist pattern

INVENTOR(S): Katano, Akira; Masuda, Yasuo; Doi, Kosuke; Ohara,
 Hidekatsu

PATENT ASSIGNEE(S): Tokyo Ohka Kogyo Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001312060	A2	20011109	JP 2000-132408	20000501
PRIORITY APPLN. INFO.:			JP 2000-132408	20000501

AB The photoresist composition contains an alkali-soluble novolak
 resin whose phenolic hydroxyl groups are partially esterified with
 1,2-naphthoquinonediazide sulfonyl group, and an acid
 generator. A substrate having a photosensitive film of
 $\geq 3.0 \mu\text{m}$ thickness made from the photoresist
 composition is claimed. The photosensitive film of $\geq 6.0 \mu\text{m}$
 thickness is image-wise exposed with i-line (365 nm) and developed to form

a pattern. Fineness of the formed photoresist pattern may be enhanced by the following processes; applying an acid-**crosslinkable** material on whole part of the substrate having the pattern, heating or irradiating with UV to allow the material to be **crosslinked** by acids diffused from the pattern surface to form a coating on the pattern, and developing. The **photoresist composition** gives a heat-resistant, thick-film, high-resolution, and sharp-edge pattern of high aspect ratio.

IT 202148-85-4P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(preparation of pos.-working **photoresist composition** containing partially esterified alkali-soluble novolak resin, and its pattern formation)

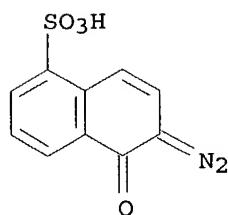
RN 202148-85-4 CAPLUS

CN Formaldehyde, polymer with 3-methylphenol, 4-methylphenol and 2,3,5-trimethylphenol, 6-diazo-5,6-dihydro-5-oxo-1-naphthalenesulfonate (9CI) (CA INDEX NAME)

CM 1

CRN 20546-03-6

CMF C10 H6 N2 O4 S



CM 2

CRN 123236-78-2

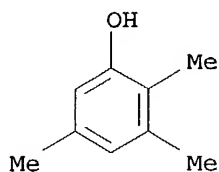
CMF (C9 H12 O . C7 H8 O . C7 H8 O . C H2 O)x

CCI PMS

CM 3

CRN 697-82-5

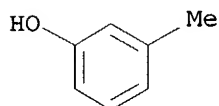
CMF C9 H12 O



CM 4

CRN 108-39-4

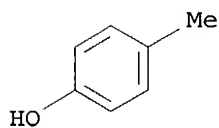
CMF C7 H8 O



CM 5

CRN 106-44-5

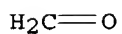
CMF C7 H8 O



CM 6

CRN 50-00-0

CMF C H2 O



IC ICM G03F007-023

ICS C08K005-16; C08L061-14; G03F007-40; H01L021-027; C08G008-28

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST alk sol novolak photoresist thick film; novolak photoresist pattern fineness enhancement coating **resist**; lithog pos novolak

photoresist thick film; acetal polymer **resist** coating novolak
photoresist pattern; naphthoquinonediazide sulfonate novolak phenolic
resin photoresist; acid **crosslinking** polymer coating novolak
photoresist pattern

IT Polyvinyl acetals

RL: TEM (Technical or engineered material use); USES (Uses)
(S-Lec KW-1, acid-**crosslinked**, formed on novolak photoresist
pattern; preparation of pos.-working **photoresist composition**
containing partially esterified alkali-soluble novolak resin, and its
pattern
formation)

IT Polymers, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(acid-**crosslinked**, formed on novolak photoresist pattern;
preparation of pos.-working **photoresist composition** containing
partially esterified alkali-soluble novolak resin, and its pattern
formation)

IT Acids, uses

RL: MOA (Modifier or additive use); USES (Uses)
(**crosslinking** agents for polymers formed on novolak
photoresist; preparation of pos.-working **photoresist compn**
. containing partially esterified alkali-soluble novolak resin, and its
pattern formation)

IT Phenolic resins, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(novolak; preparation of pos.-working **photoresist composition**
containing partially esterified alkali-soluble novolak resin, and its
pattern
formation)

IT **Crosslinking**

(polymer, as coating on novolak photoresist pattern; preparation of
pos.-working **photoresist composition** containing partially
esterified alkali-soluble novolak resin, and its pattern formation)

IT Lithography

Positive photoresists

(preparation of pos.-working **photoresist composition** containing
partially esterified alkali-soluble novolak resin, and its pattern
formation)

IT 54769-31-2

RL: MOA (Modifier or additive use); USES (Uses)
(**acid generator**; preparation of pos.-working
photoresist composition containing partially esterified
alkali-soluble novolak resin, and its pattern formation)

IT 5395-50-6, Cymel 1172

RL: MOA (Modifier or additive use); USES (Uses)
(**crosslinking** agent for polyvinyl acetals; preparation of
pos.-working **photoresist composition** containing partially
esterified alkali-soluble novolak resin, and its pattern formation)

IT 202148-85-4P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(preparation of pos.-working **photoresist composition** containing

partially esterified alkali-soluble novolak resin, and its pattern formation)

L51 ANSWER 15 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:524739 CAPLUS

DOCUMENT NUMBER: 135:114444

TITLE: Electron beam or x-ray negative-working **resist composition**

INVENTOR(S): Aoai, Toshiaki; Adegawa, Yutaka; Yagihara, Morio

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 85 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1117004	A2	20010718	EP 2001-100113	20010112
EP 1117004	A3	20030813		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001337452	A2	20011207	JP 2001-5374	20010112
PRIORITY APPLN. INFO.:			JP 2000-4766	A 20000113
			JP 2000-84469	A 20000324

AB The invention relates to a neg.-working **resist composition** useful for super microlithog. such as VLSI and high-capacity microchips and to a **composition** capable of forming microfine patterns using X-rays and an electron beam, and to a **composition** suitable for working of semiconductor devices using an electron beam. A neg.-working **resist composition** for electron beams or x-rays comprises (a) a compound **generating** an acid and/or radical species by the irradiation of electron beams or x-rays, (b) a resin which is insol. in H₂O and soluble in an alkali aqueous solution, (c) a **crosslinking** agent causing **crosslinking** with the resin of component (b) by the action of an acid, and (d) a compound having ≥ 1 unsatd. bond capable of being polymerized by an acid and/or a radical, and a neg.-working **resist composition** for electron beams or x-rays comprising (a) a compound **generating** an acid and/or radical species by the irradiation of electron beams or x-rays, (b') a resin having ≥ 1 unsatd. bond polymerizable by an acid and/or an alkali, which is insol. in H₂O but soluble in an alkali aqueous solution, and (c) a **crosslinking** agent causing **crosslinking** with the resin (b') by the action of an acid are disclosed.

IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
168634-95-5P 258341-98-9P 270563-93-4P
270563-96-7P 279244-43-8P 349619-92-7P
349647-26-3P

RL: DEV (Device component use); IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)
(photoacid generator; acid-generating

agent in neg.-working photoresist composition for X-ray
or electron beam lithog.)

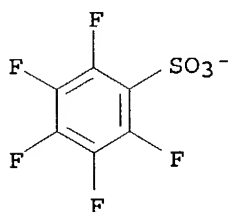
RN 153698-46-5 CAPLUS

CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1)
(9CI) (CA INDEX NAME)

CM 1

CRN 46377-88-2

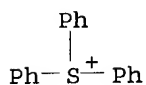
CMF C6 F5 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



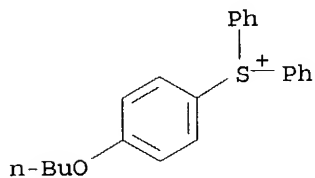
RN 168634-95-5 CAPLUS

CN Sulfonium, (4-butoxyphenyl)diphenyl-, salt with 4-methylbenzenesulfonic
acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 112406-00-5

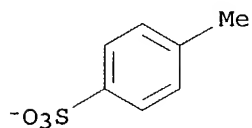
CMF C22 H23 O S



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



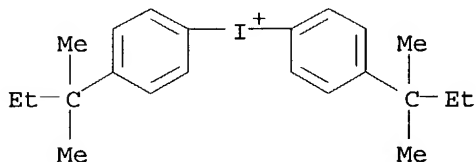
RN 258341-98-9 CAPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

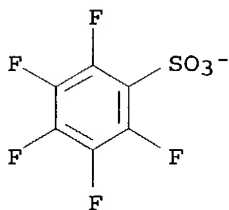
CMF C22 H30 I



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



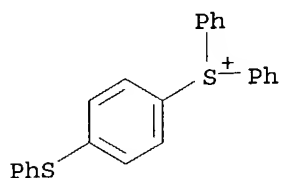
RN 270563-93-4 CAPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47480-44-4

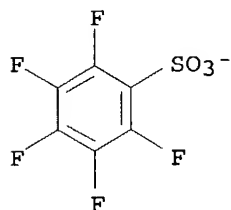
CMF C24 H19 S2



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



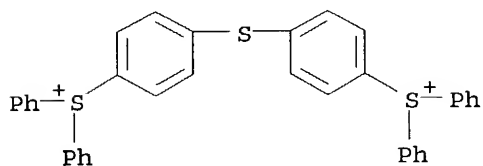
RN 270563-96-7 CAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
pentafluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 74227-34-2

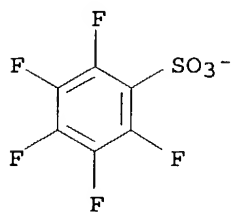
CMF C36 H28 S3



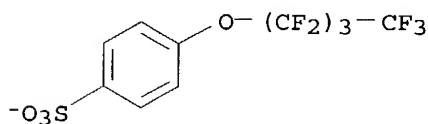
CM 2

CRN 46377-88-2

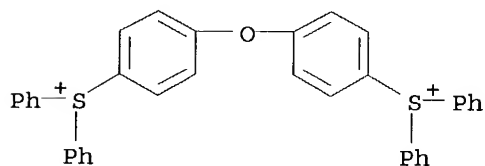
CMF C6 F5 O3 S



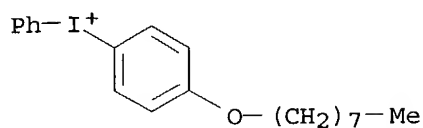
RN 279244-43-8 CAPLUS
 CN Sulfonium, (oxydi-4,1-phenylene)bis[diphenyl-, salt with
 4-(nonafluorobutoxy)benzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)
 CM 1
 CRN 279244-42-7
 CMF C10 H4 F9 O4 S



CM 2
 CRN 279244-41-6
 CMF C36 H28 O S2



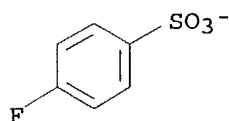
RN 349619-92-7 CAPLUS
 CN Iodonium, [4-(octyloxy)phenyl]phenyl-, salt with 4-fluorobenzenesulfonic
 acid (1:1) (9CI) (CA INDEX NAME)
 CM 1
 CRN 121239-74-5
 CMF C20 H26 I O



CM 2

CRN 61657-38-3

CMF C6 H4 F O3 S



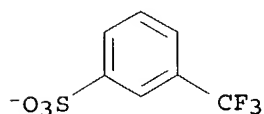
RN 349647-26-3 CAPLUS

CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with
3-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 104994-84-5

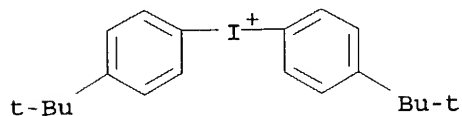
CMF C7 H4 F3 O3 S



CM 2

CRN 61267-44-5

CMF C20 H26 I



IT 270564-02-8P, Tetramethylammonium pentafluorobenzenesulfonate

RL: DEV (Device component use); IMF (Industrial manufacture); SPN
(Synthetic preparation); **PREP (Preparation)**; USES (Uses)

(synthesis of acid-generating agent for
neg.-working photoresist composition for X-ray or
electron beam lithog.)

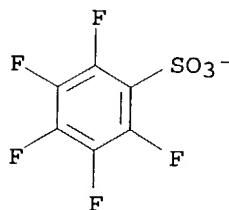
RN 270564-02-8 CAPLUS

CN Methanaminium, N,N,N-trimethyl-, salt with pentafluorobenzenesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 46377-88-2

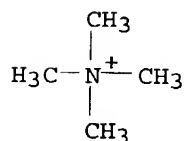
CMF C6 F5 O3 S



CM 2

CRN 51-92-3

CMF C4 H12 N



IT 349647-12-7P 349647-16-1P

RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer
in formulation); SPN (Synthetic preparation); TEM (Technical or engineered
material use); PREP (Preparation); USES (Uses)

(synthesis of alkali-soluble resin for neg.-working photoresist
composition for X-ray or electron beam lithog.)

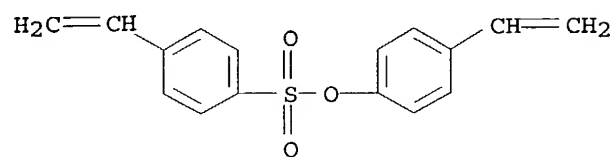
RN 349647-12-7 CAPLUS

CN Benzenesulfonic acid, 4-ethenyl-, 4-ethenylphenyl ester, polymer with
4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 349647-11-6

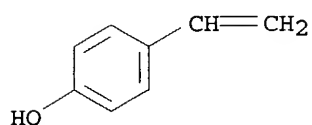
CMF C16 H14 O3 S



CM 2

CRN 2628-17-3

CMF C8 H8 O



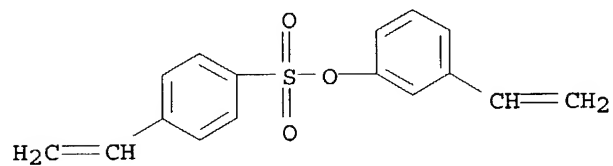
RN 349647-16-1 CAPLUS

CN Benzenesulfonic acid, 4-ethenyl-, 3-ethenylphenyl ester, polymer with
3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 349647-15-0

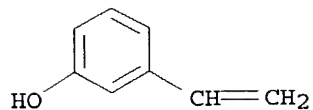
CMF C16 H14 O3 S



CM 2

CRN 620-18-8

CMF C8 H8 O



IC ICM G03F007-038

ICS G03F007-004; G03F007-028

- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 36, 76
- ST electron beam x ray neg photoresist **crosslinking** hydroxystyrene polymer
- IT Photoresists
(chemical-amplified; neg.-working **photoresist composition** for X-ray or electron beam lithog. containing alkali-soluble resin and acidic **crosslinking agent**)
- IT **Crosslinking agents**
Electron beam lithography
X-ray lithography
(neg.-working **photoresist composition** for X-ray or electron beam lithog. containing alkali-soluble resin and acidic **crosslinking agent**)
- IT 3089-11-0P 32449-09-5P
RL: DEV (Device component use); IMF (Industrial manufacture); MOA (Modifier or additive use); **PREP (Preparation)**; USES (Uses)
(**crosslinking agent**; **crosslinking agent** for neg.-working **photoresist composition** for X-ray or electron beam lithog.)
- IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
168634-95-5P 258341-98-9P 270563-93-4P
270563-96-7P 279244-43-8P 349619-92-7P
349647-26-3P
RL: DEV (Device component use); IMF (Industrial manufacture); MOA (Modifier or additive use); **PREP (Preparation)**; USES (Uses)
(photoacid **generator**; acid-generating agent in neg.-working **photoresist composition** for X-ray or electron beam lithog.)
- IT 15625-89-5, Trimethylolpropane triacrylate 17831-71-9, Tetraethyleneglycol diacrylate 29570-58-9, Dipentaerythritol hexaacrylate
RL: DEV (Device component use); NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(polymerizable monomer in neg.-working **photoresist composition** for X-ray or electron beam lithog.)
- IT 161679-94-3P 161679-95-4P 161679-98-7P 162846-57-3P 185502-11-8P
185502-14-1P 185502-15-2P 197087-73-3P 197087-74-4P
RL: DEV (Device component use); IMF (Industrial manufacture); MOA (Modifier or additive use); SPN (Synthetic preparation); **PREP (Preparation)**; USES (Uses)
(synthesis of acid **crosslinking agent** for neg.-working **photoresist composition** for X-ray or electron beam lithog.)
- IT 270564-02-8P, Tetramethylammonium pentafluorobenzenesulfonate
RL: DEV (Device component use); IMF (Industrial manufacture); SPN (Synthetic preparation); **PREP (Preparation)**; USES (Uses)
(synthesis of acid-generating agent for neg.-working **photoresist composition** for X-ray or electron beam lithog.)

IT 24979-73-5P, 3-Hydroxystyrene-styrene copolymer 24979-74-6P,
 4-Hydroxystyrene-styrene copolymer 110123-10-9P, 4-Hydroxystyrene-2-
 hydroxyethyl acrylate copolymer 171429-59-7P, 4-Hydroxystyrene-4-
 acetoxystyrene copolymer 185405-14-5P 349647-01-4P 349647-02-5P
 349647-03-6P 349647-04-7P 349647-05-8P 349647-06-9P 349647-07-0P
 349647-08-1P 349647-10-5P **349647-12-7P** 349647-14-9P
349647-16-1P 349647-18-3P 349647-19-4P 349647-21-8P
 349647-23-0P 349652-45-5P 349652-47-7P 349652-48-8P

RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer
 in formulation); SPN (Synthetic preparation); TEM (Technical or engineered
 material use); **PREP (Preparation)**; USES (Uses)

(synthesis of alkali-soluble resin for neg.-working photoresist
composition for X-ray or electron beam lithog.)

L51 ANSWER 16 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:524737 CAPLUS

DOCUMENT NUMBER: 135:114443

TITLE: Negative-working resist composition

INVENTOR(S): Uenishi, Kazuya; Adegawa, Yutaka; Shirakawa, Koji

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 87 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

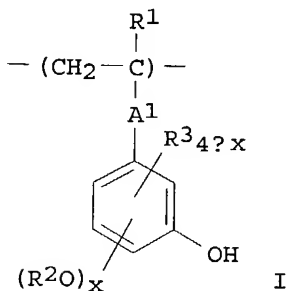
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1117002	A1	20010718	EP 2001-100188	20010117
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002049151	A2	20020215	JP 2000-235949	20000803
US 6673512	B1	20040106	US 2001-760806	20010117
PRIORITY APPLN. INFO.:			JP 2000-8229	A 20000117
			JP 2000-151477	A 20000523
			JP 2000-235949	A 20000803

OTHER SOURCE(S): MARPAT 135:114443

GI



AB The invention relates to a neg.-working **composition** useful in ultramicro-lithog. or other photofabrication for production of VLSI or high-capacity microchips and to a neg.-working photoresists that can provide micropatterns using X-ray or electron beam, and that can be used in miniaturization processing of semiconductor devices using electron beams. The chemical amplification system neg.-working **resist composition** for an electron beam and/or an x-ray, has excellent in sensitivity and resolution and has a rectangular profile, comprising an alkali-soluble resin having structural units represented by (I), a compound **generating** an acid by irradiation of the electron beam or the x-ray, and a **crosslinking** agent which initiates **crosslinking** by the acid.

IT 220122-68-9P 270563-92-3P 270563-93-4P
270563-96-7P 270563-98-9P 349619-84-7P
349619-88-1P 349619-92-7P 349619-96-1P

RL: DEV (Device component use); IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)
(photoacid generator; acid generating agent in neg.-working photoresist composition for X-ray or electron beam lithog.)

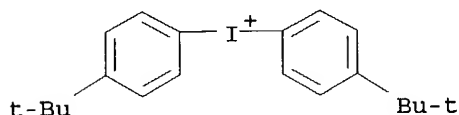
RN 220122-68-9 CAPLUS

CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 61267-44-5

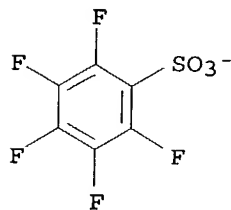
CMF C20 H26 I



CM 2

CRN 46377-88-2

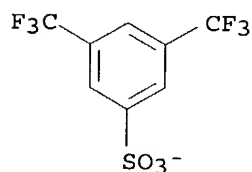
CMF C6 F5 O3 S



RN 270563-92-3 CAPLUS
 CN Sulfonium, bis(4-methylphenyl)phenyl-, salt with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

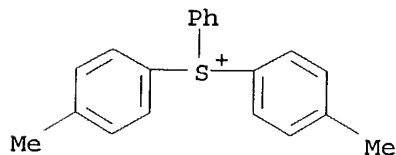
CM 1

CRN 213740-84-2
 CMF C8 H3 F6 O3 S



CM 2

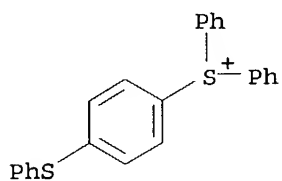
CRN 70082-58-5
 CMF C20 H19 S



RN 270563-93-4 CAPLUS
 CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

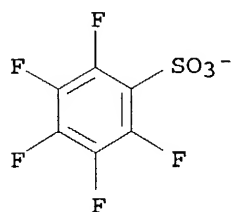
CRN 47480-44-4
 CMF C24 H19 S2



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



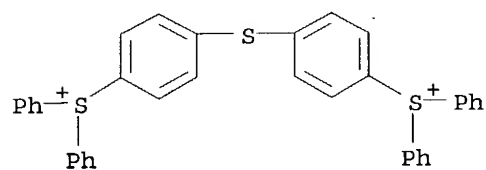
RN 270563-96-7 CAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with pentafluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 74227-34-2

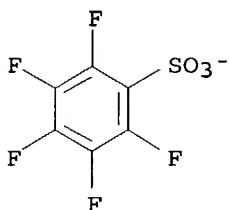
CMF C36 H28 S3



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



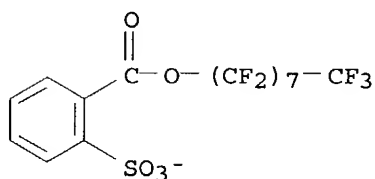
RN 270563-98-9 CAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[bis(4-methylphenyl)-, salt with 1-(heptadecafluorooctyl) 2-sulfo benzoate (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 270563-97-8

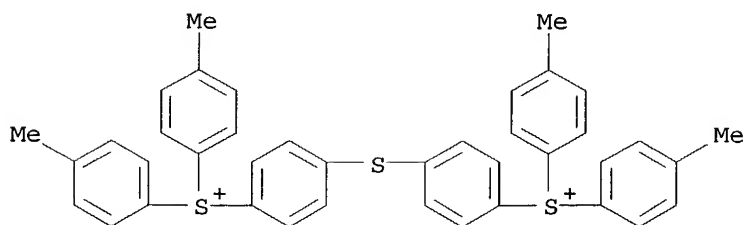
CMF C15 H4 F17 O5 S



CM 2

CRN 222722-48-7

CMF C40 H36 S3



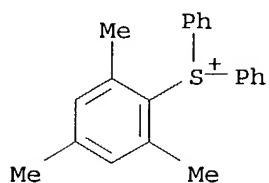
RN 349619-84-7 CAPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with 2-nitro-4-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47191-44-6

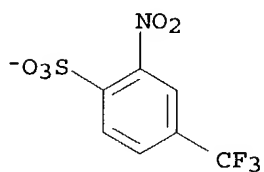
CMF C21 H21 S



CM 2

CRN 46806-65-9

CMF C7 H3 F3 N O5 S



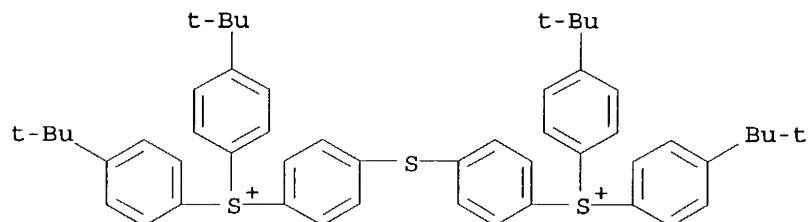
RN 349619-88-1 CAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[bis[4-(1,1-dimethylethyl)phenyl]-, salt with 4-fluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 343629-56-1

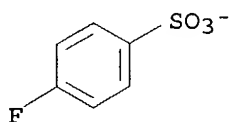
CMF C52 H60 S3



CM 2

CRN 61657-38-3

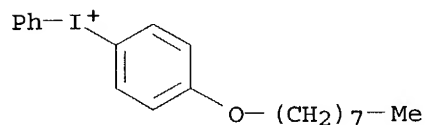
CMF C6 H4 F O3 S



RN 349619-92-7 CAPLUS
 CN Iodonium, [4-(octyloxy)phenyl]phenyl-, salt with 4-fluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

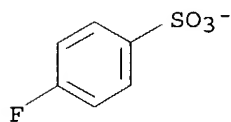
CM 1

CRN 121239-74-5
 CMF C20 H26 I O



CM 2

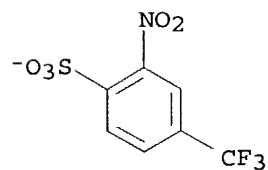
CRN 61657-38-3
 CMF C6 H4 F O3 S



RN 349619-96-1 CAPLUS
 CN Iodonium, bis(4-methylphenyl)-, salt with 2-nitro-4-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

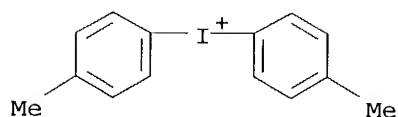
CRN 46806-65-9
 CMF C7 H3 F3 N O5 S



CM 2

CRN 46449-56-3

CMF C14 H14 I



IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate

RL: DEV (Device component use); IMF (Industrial manufacture); SPN

(Synthetic preparation); PREP (Preparation); USES (Uses)

(photoacid generator; synthesis of acid-

generating agent for neg.-working photoresist

composition for X-ray or electron beam lithog.)

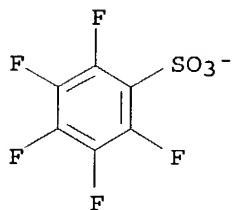
RN 153698-46-5 CAPLUS

CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1)
(9CI) (CA INDEX NAME)

CM 1

CRN 46377-88-2

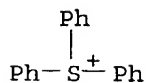
CMF C6 F5 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



IT 258341-98-9P 270564-02-8P, Tetramethylammonium

pentafluorobenzenesulfonate

RL: DEV (Device component use); IMF (Industrial manufacture); SPN
(Synthetic preparation); PREP (Preparation); USES (Uses)
(synthesis of acid-generating agent for
neg.-working photoresist composition for X-ray or
electron beam lithog.)

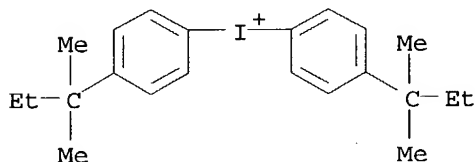
RN 258341-98-9 CAPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

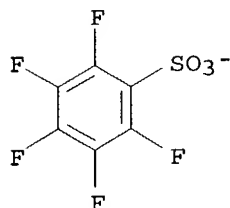
CMF C22 H30 I



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



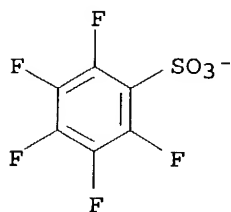
RN 270564-02-8 CAPLUS

CN Methanaminium, N,N,N-trimethyl-, salt with pentafluorobenzenesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 46377-88-2

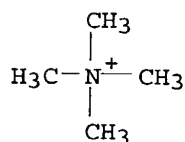
CMF C6 F5 O3 S



CM 2

CRN 51-92-3

CMF C4 H12 N



IC ICM G03F007-004

ICS G03F007-038

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 36, 76

ST neg photoresist **crosslinking** agent hydroxystyrene polymer

IT Photoresists

(chemical-amplified; neg.-working **photoresist composition**

for X-ray or electron beam lithog. containing alkali-soluble resin and

acidic

crosslinking agent)

IT **Crosslinking** agents

Electron beam lithography

X-ray lithography

(neg.-working **photoresist composition** for X-ray or

electron beam lithog. containing alkali-soluble resin and acidic

crosslinking agent)

IT 3089-11-0P 32449-09-5P

RL: DEV (Device component use); IMF (Industrial manufacture); MOA

(Modifier or additive use); **PREP (Preparation)**; **USES (Uses)**

(**crosslinking agent**; **crosslinking agent** in

neg.-working **photoresist composition** for X-ray or

electron beam lithog.)

IT 484-47-9P, 2,4,5-Triphenylimidazole 24979-70-2P, Poly(4-hydroxystyrene)
27029-76-1P

RL: DEV (Device component use); IMF (Industrial manufacture); MOA

(Modifier or additive use); **PREP (Preparation)**; **USES (Uses)**

(neg.-working **photoresist composition** for X-ray or

- electron beam lithog. containing)
- IT 220122-68-9P 270563-92-3P 270563-93-4P
270563-96-7P 270563-98-9P 349619-84-7P
349619-88-1P 349619-92-7P 349619-96-1P
RL: DEV (Device component use); IMF (Industrial manufacture); MOA
(Modifier or additive use); **PREP (Preparation)**; USES (Uses)
(photoacid generator; acid generating
agent in neg.-working photoresist composition for X-ray
or electron beam lithog.)
- IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
RL: DEV (Device component use); IMF (Industrial manufacture); SPN
(Synthetic preparation); **PREP (Preparation)**; USES (Uses)
(photoacid generator; synthesis of acid-
generating agent for neg.-working photoresist
composition for X-ray or electron beam lithog.)
- IT 161679-94-3P 161679-95-4P 161679-98-7P 162846-57-3P 185502-11-8P
185502-14-1P 185502-15-2P 197087-73-3P 197087-74-4P
RL: DEV (Device component use); IMF (Industrial manufacture); MOA
(Modifier or additive use); SPN (Synthetic preparation); **PREP
(Preparation)**; USES (Uses)
(synthesis of acid crosslinking agent for neg.-working
photoresist composition for X-ray or electron beam
lithog.)
- IT 258341-98-9P 270564-02-8P, Tetramethylammonium
pentafluorobenzenesulfonate
RL: DEV (Device component use); IMF (Industrial manufacture); SPN
(Synthetic preparation); **PREP (Preparation)**; USES (Uses)
(synthesis of acid-generating agent for
neg.-working photoresist composition for X-ray or
electron beam lithog.)
- IT 24979-69-9P, Poly(3-hydroxystyrene) 24979-73-5P, 3-Hydroxystyrene-
styrene copolymer 149614-53-9P, 3-Hydroxystyrene-4-hydroxystyrene
copolymer 349619-43-8P 349619-47-2P 349619-51-8P 349619-56-3P
349619-61-0P 349619-65-4P 349619-68-7P 349619-72-3P 349619-76-7P
349619-80-3P
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer
in formulation); SPN (Synthetic preparation); TEM (Technical or engineered
material use); **PREP (Preparation)**; USES (Uses)
(synthesis of alkali-soluble polymer resin for neg.-working
photoresist composition for X-ray or electron beam
lithog.)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 17 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:472087 CAPLUS
DOCUMENT NUMBER: 135:68564
TITLE: Negative radiation-sensitive chemically amplified
resin composition
INVENTOR(S): Kai, Toshiyuki; Wang, Yong; Kusumoto, Shirou; Ohta,
Yoshihisa
PATENT ASSIGNEE(S): Jsr Corp., Japan

SOURCE: Eur. Pat. Appl., 15 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1111465	A1	20010627	EP 2000-128363	20001222
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001183832	A2	20010706	JP 1999-367575	19991224
US 2001006758	A1	20010705	US 2000-741334	20001221
US 6468714	B2	20021022		

PRIORITY APPLN. INFO.: JP 1999-367575 A 19991224

OTHER SOURCE(S): MARPAT 135:68564

AB A neg. radiation-sensitive resin **composition** comprises: (A) an alkali-soluble resin containing a copolymer selected from the group consisting of

a hydroxystyrene/styrene copolymer having hydroxystyrene units in a content of from 65 to 90 mol% and a hydroxystyrene/ α -methylstyrene copolymer having hydroxystyrene units in a content of from 65 to 90 mol%, (B) a radiation-sensitive **acid-generating** agent containing a hydroxyl group-containing onium salt compound, and (C) a **crosslinking** agent containing an N-(alkoxymethyl)glycoluril compound. The **composition** is suitable as a chemical amplified neg. **resist**, to which alkaline developing solns. having usual concentration are applicable and which can form, in usual line-and-space patterns, **resist** patterns having a rectangular cross-sectional shape in a high resolution and also has superior sensitivity, developability and dimensional fidelity.

IT 345580-99-6, processes 345581-00-2, processes
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (acid-diffusion control agent; neg. radiation-sensitive chemical amplified resin **composition** comprising)

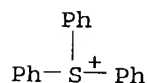
RN 345580-99-6 CAPLUS

CN Sulfonium, triphenyl-, salt with 2-hydroxybenzoic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 18393-55-0

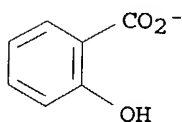
CMF C18 H15 S



CM 2

CRN 63-36-5

CMF C7 H5 O3



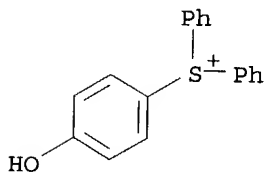
RN 345581-00-2 CAPLUS

CN Sulfonium, (4-hydroxyphenyl)diphenyl-, salt with 2-hydroxybenzoic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 108493-51-2

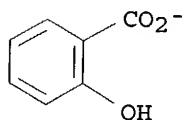
CMF C18 H15 O S



CM 2

CRN 63-36-5

CMF C7 H5 O3



IT 141801-36-7P 157692-56-3P

RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP** (Preparation); PROC (Process); USES (Uses)
(acid-generating agent; neg. radiation-sensitive chemical amplified resin composition comprising)

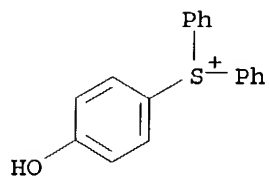
RN 141801-36-7 CAPLUS

CN Sulfonium, (4-hydroxyphenyl)diphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 108493-51-2

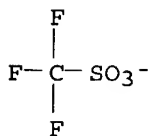
CMF C18 H15 O S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



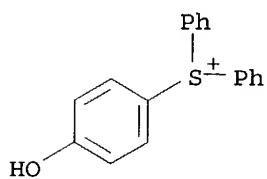
RN 157692-56-3 CAPLUS

CN Sulfonium, (4-hydroxyphenyl)diphenyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 108493-51-2

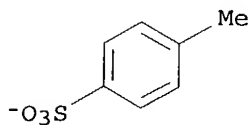
CMF C18 H15 O S



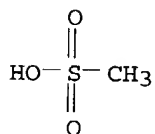
CM 2

CRN 16722-51-3

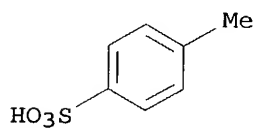
CMF C7 H7 O3 S



IT 75-75-2, Methanesulfonic acid 657-84-1, Sodium
p-toluenesulfonate 945-51-7, Diphenyl sulfoxide
2926-27-4, Potassium trifluoromethanesulfonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of acid-generating agent)
RN 75-75-2 CAPLUS
CN Methanesulfonic acid (8CI, 9CI) (CA INDEX NAME)

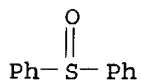


RN 657-84-1 CAPLUS
CN Benzenesulfonic acid, 4-methyl-, sodium salt (9CI) (CA INDEX NAME)

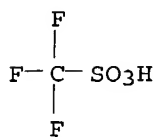


● Na

RN 945-51-7 CAPLUS
CN Benzene, 1,1'-sulfinylbis- (9CI) (CA INDEX NAME)



RN 2926-27-4 CAPLUS
CN Methanesulfonic acid, trifluoro-, potassium salt (8CI, 9CI) (CA INDEX NAME)



● K

IT 116808-67-4P 345580-98-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(in preparation of acid-generating agent)

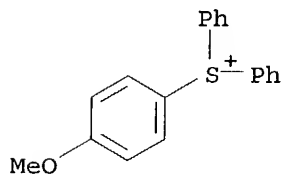
RN 116808-67-4 CAPLUS

CN Sulfonium, (4-methoxyphenyl)diphenyl-, salt with trifluoromethanesulfonic
acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 70084-23-0

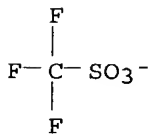
CMF C19 H17 O S



CM 2

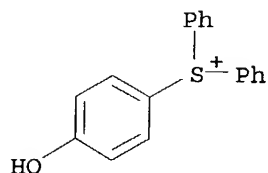
CRN 37181-39-8

CMF C F3 O3 S



RN 345580-98-5 CAPLUS

CN Sulfonium, (4-hydroxyphenyl)diphenyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

- IC ICM G03F007-038
ICS G03F007-004
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST **photoresist** neg chem amplified **compn acid**
generating agent; photolithog **photoresist** neg chem
amplified **compn**
- IT Negative photoresists
Photolithography
(neg. radiation-sensitive chemical amplified resin **composition**)
- IT 1116-76-3, Tri-n-octylamine 345580-99-6, processes
345581-00-2, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(acid-diffusion control agent; neg. radiation-sensitive chemical amplified resin **composition** comprising)
- IT 141801-36-7P 157692-56-3P
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP**
(**Preparation**); PROC (Process); USES (Uses)
(**acid-generating** agent; neg. radiation-sensitive chemical amplified resin **composition** comprising)
- IT 17464-88-9
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**crosslinking** agent; neg. radiation-sensitive chemical amplified resin **composition** comprising)
- IT 75-75-2, Methanesulfonic **acid** 100-66-3, Anisole,
reactions 657-84-1, Sodium p-toluenesulfonate 945-51-7
, Diphenyl sulfoxide 2926-27-4, Potassium
trifluoromethanesulfonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of **acid-generating** agent)
- IT 116808-67-4P 345580-98-5P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(**Preparation**); RACT (Reactant or reagent)
(in preparation of **acid-generating** agent)
- IT 24979-74-6, p-Hydroxystyrene-styrene copolymer 127523-21-1,
p-Hydroxystyrene- α -methylstyrene copolymer

RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(neg. radiation-sensitive chemical amplified resin **composition** comprising)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 18 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:327012 CAPLUS

DOCUMENT NUMBER: 130:359300

TITLE: Antireflective coating **composition** containing photoacid generator, substrate having its coating layer, and manufacture of photoresist relief image using it

INVENTOR(S): Pavelchek, Edward K.; Docanto, Manuel

PATENT ASSIGNEE(S): Shipley Company L.L.C., USA

SOURCE: Jpn. Kokai Tokkyo Koho, 55 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11133618	A2	19990521	JP 1998-61845	19980206
JP 3408415	B2	20030519		
US 5939236	A	19990817	US 1997-797741	19970207
US 6261743	B1	20010717	US 1998-58343	19980410
			US 1997-797741 A	19970207

PRIORITY APPLN. INFO.:

AB The **composition** for use with overcoated **photoresists** comprises (A) a resin binder, (B) an **acid** or thermal **acid generator**, and (C) a photoacid generator. The substrate is successively coated with the above **composition** layer and a **photoresist** layer. The photoresist relief image is manufactured by (1) successively applying the above **composition** and a **photoresist composition** on a substrate, (2) exposing the photoresist layer to activating radiation to **generate acids** from the photoacid **generator**, and (3) developing the exposed photoresist layer. The coating **composition**, particularly useful for deep UV applications in patterning semiconductor wafers, reduces undesired footing of overcoated **resist** relief images.

IT 193345-23-2P

RL: CAT (Catalyst use); MOA (Modifier or additive use); PNU (Preparation, unclassified); **PREP (Preparation)**; USES (Uses)

(antireflective coating **composition** containing photoacid generator used with overcoated photoresists for high-resolution **resist** reliefs without footing)

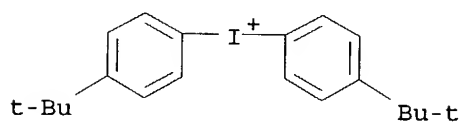
RN 193345-23-2 CAPLUS

CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with 7,7-dimethyl-2-oxobicyclo[2.2.1]heptane-1-methanesulfonic acid (1:1) (9CI)
(CA INDEX NAME)

CM 1

CRN 61267-44-5

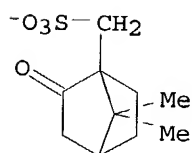
CMF C20 H26 I



CM 2

CRN 55077-28-6

CMF C10 H15 O4 S



IT 3144-16-9, (+-)-10-Camphorsulfonic acid

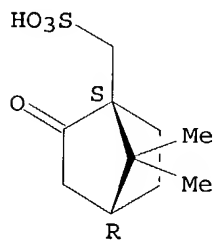
RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with potassium iodate and butylbenzene; antireflective coating **composition** containing photoacid generator used with overcoated photoresists for high-resolution **resist** reliefs without footing)

RN 3144-16-9 CAPLUS

CN Bicyclo[2.2.1]heptane-1-methanesulfonic acid, 7,7-dimethyl-2-oxo-, (1S,4R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IC ICM G03F007-11

ICS C09D005-00; G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other

- Reprographic Processes)
Section cross-reference(s): 42, 76
- ST antireflective coating photoacid generator photoresist overcoating; relief photoresist antireflective coating lamination; semiconductor wafer patterning **resist** antireflective coating
- IT Antireflective films
 Photoresists
 (antireflective coating **composition** containing photoacid generator used with overcoated photoresists for high-resolution **resist** reliefs without footing)
- IT Phenolic resins, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (novolak, reaction products with anthracene methacrylic acid; antireflective coating **composition** containing photoacid generator used with overcoated photoresists for high-resolution **resist** reliefs without footing)
- IT Catalysts
 (photochem., photoacid generator; antireflective coating **compn** . containing photoacid generator used with overcoated photoresists for high-resolution **resist** reliefs without footing)
- IT 193345-23-2P
 RL: CAT (Catalyst use); MOA (Modifier or additive use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (antireflective coating **composition** containing photoacid generator used with overcoated photoresists for high-resolution **resist** reliefs without footing)
- IT 161065-83-4P
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (antireflective coating **composition** containing photoacid generator used with overcoated photoresists for high-resolution **resist** reliefs without footing)
- IT 17464-88-9, Powderlink 1174
 RL: MOA (Modifier or additive use); USES (Uses)
 (**crosslinking** agent; antireflective coating **composition** containing photoacid generator used with overcoated photoresists for high-resolution **resist** reliefs without footing)
- IT 181186-90-3, UVIIHS
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (**photoresist**; antireflective coating **composition** containing photoacid generator used with overcoated photoresists for high-resolution **resist** reliefs without footing)
- IT 7758-05-6, Potassium iodate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction with butylbenzene and camphorsulfonic acid; antireflective coating **composition** containing photoacid generator used with overcoated photoresists for high-resolution **resist** reliefs without footing)
- IT 3144-16-9, (+-)-10-Camphorsulfonic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction with potassium iodate and butylbenzene; antireflective

coating **composition** containing photoacid generator used with overcoated photoresists for high-resolution **resist** reliefs without footing)

IT 98-06-6, tert-Butylbenzene

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with potassium iodate and camphorsulfonic acid; antireflective coating **composition** containing photoacid generator used with overcoated photoresists for high-resolution **resist** reliefs without footing)

L51 ANSWER 19 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:319016 CAPLUS

DOCUMENT NUMBER: 130:353322

TITLE: Photocurable silicone polymers with good alkali development property, **photoresist compositions** containing them and method for **resist** patterning

INVENTOR(S): Igarashi, Miwa; Watabe, Keiji; Yano, Akira; Namiki, Takahisa; Nozaki, Koji

PATENT ASSIGNEE(S): Fujitsu Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11130860	A2	19990518	JP 1998-220605	19980804
PRIORITY APPLN. INFO.:			JP 1997-234511	19970829

AB The **compns.** can be cured with radiation of the vacuum UV range to give micro-patterns by the microlithog. process, contain silicone polymers bearing alkali-soluble organic ether groups or groups which become alkali soluble when reacted with an acid which is produced from its precursor by light exposure. Thus, heating 1,3-bis(carboxypropyl)tetramethyldisiloxane in THF containing water and concentrated HCl at reflux, adding tetraethoxysilane

and reacting for 1 h gave a silicone oligomer with Mw 2000, which was further polycondensed with tetraethoxysilane in the presence of H2SO4 to a polymer with Mw 10,000. Spin-coating a MIBK solution of the polymer on a silicon wafer and heating at 90° for 60 s gave a film which became soluble quickly in a 2.38% aqueous solution of tetramethylammonium hydroxide.

IT 66003-78-9, Triphenylsulfonium triflate

RL: CAT (Catalyst use); USES (Uses)
(photo-acid generator; photocurable silicone polymers with good alkali development property, **photoresist compns.** containing them and method for **resist** patterning)

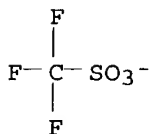
RN 66003-78-9 CAPLUS

CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI)
(CA INDEX NAME)

CM 1

CRN 37181-39-8

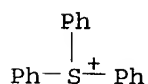
CMF C F3 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



- IC ICM C08G077-04
ICS C08G077-48; C08L083-04; H01L021-027; G03F007-075
- CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 76
- ST alkali sol silicate silicon polymer photoresist; tetraethoxysilane hydrolytic polymer photoresist alkali sol; tetramethylammonium hydroxide sol silicon polymer photoresist
- IT Photoresists
(photocurable silicone polymers with good alkali development property, **photoresist compns.** containing them and method for **resist** patterning)
- IT 4261-70-5, Methoxymethylmelamine
RL: MOA (Modifier or additive use); USES (Uses)
(**crosslinker**; photocurable silicone polymers with good alkali development property, **photoresist compns.** containing them and method for **resist** patterning)
- IT 75-59-2, Tetramethylammonium hydroxide
RL: NUU (Other use, unclassified); USES (Uses)
(developer; photocurable silicone polymers with good alkali development property, **photoresist compns.** containing them and method for **resist** patterning)
- IT 66003-78-9, Triphenylsulfonium triflate
RL: CAT (Catalyst use); USES (Uses)
(photo-acid generator; photocurable silicone polymers with good alkali development property, **photoresist compns.** containing them and method for **resist** patterning)
- IT 3353-68-2DP, reaction products with silicon polymers 7631-86-9DP,

Silica, modified with hydrolyzable siloxane compds., uses
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or
 engineered material use); **PREP (Preparation)**; USES (Uses)
 (photocurable silicone polymers with good alkali development property,
photoresist compns. containing them and method for
resist patterning)

IT 999-97-3, Hexamethyldisilazane
 RL: MOA (Modifier or additive use); USES (Uses)
 (silylating agents; photocurable silicone polymers with good alkali
 development property, **photoresist compns.** containing
 them and method for **resist patterning**)

L51 ANSWER 20 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1998:795188 CAPLUS

DOCUMENT NUMBER: 130:45293

TITLE: **Composition** for antireflection or light

absorption film and compounds for use in same
 INVENTOR(S): Padmanaban, Munirathna; Kang, Wen-bing; Tanaka,
 Hatsuyuki; Kimura, Ken; Pawlowski, Georg

PATENT ASSIGNEE(S): Clariant International Ltd., Switz.

SOURCE: PCT Int. Appl., 65 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

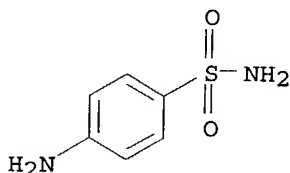
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9854619	A1	19981203	WO 1998-JP2234	19980521
W: CN, JP, KR, SG, US				
RW: DE, FR, GB, IT				
TW 473653	B	20020121	TW 1998-87107647	19980518
EP 917002	A1	19990519	EP 1998-921751	19980521
EP 917002	B1	20040317		
R: DE, FR, GB, IT				
KR 2000029602	A	20000525	KR 1999-700666	19990126
PRIORITY APPLN. INFO.:			JP 1997-137088	A 19970527
			WO 1998-JP2234	W 19980521

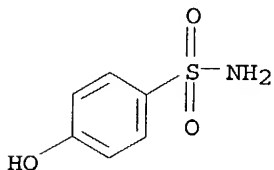
AB A **composition** capable of forming an antireflection or light
 absorption film which satisfactorily absorbs radiations having wavelengths
 of 100 to 450 nm, is free from the diffusion of a photo-generated
acid into the film or the intermixing of a **resist** with
 the film, and is excellent in storage stability and step coverage
 properties; and novel compds. and novel polymers useful for the
composition The **composition** contains a compound which is a
 (meth)acrylic monomer or polymer having at least one isocyanate or
 thioisocyanate group bonded to a side chain thereof through an alkylene
 group, etc., or contains the compound or polymer which has an aminated or
 hydroxylated organic chromophore which absorbs light in the wavelength region
 of 100 to 450 nm and is bonded to the isocyanate or thioisocyanate group.
 The **composition** is applied to a substrate and baked to form a film

serving as, e.g., an antireflection film. A chemical-amplification-type **resist** is applied to this film, and the **resist** film is exposed to light and then developed to form a **resist** image with high resolution. Due to the presence of the isocyanate or thioisocyanate group in the compound, the film serving as, e.g., an antireflection film is cured through **crosslinking** during baking. Due to the presence of the organic chromophore, the film absorbs exposure light in the wavelength region of 100 to 450 nm.

IT 63-74-1D, 4-Aminobenzenesulfonamide, reaction product with poly(2-methacryloyloxyethylisocyanate) 1576-43-8D, 4-Hydroxybenzenesulfonamide, reaction product with poly(2-methacryloyloxyethylisocyanate)
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (composition for antireflection or light absorption film)
 RN 63-74-1 CAPLUS
 CN Benzenesulfonamide, 4-amino- (9CI) (CA INDEX NAME)



RN 1576-43-8 CAPLUS
 CN Benzenesulfonamide, 4-hydroxy- (9CI) (CA INDEX NAME)



IC ICM G03F007-11
 ICS C08F020-34; C08F020-38; C08F020-10; C08F022-04; C08F022-40;
 H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 76
 ST antireflection light absorption film compn
 IT Antireflective films
 Photolithography
 Photoresists
 Semiconductor materials
 (composition for antireflection or light absorption film and
 compds. for use in same)
 IT 88007-27-6DP, reaction product with 1-aminoanthracene 100042-81-7DP,

2-Methacryloyloxyethylisocyanate-methylmethacrylate copolymer, reaction product with 1-aminoanthracene 216989-11-6P, 2-(Methacryloyloxy)ethyl isocyanate-maleic acid copolymer

RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)

(composition for antireflection or light absorption film)

IT 216989-12-7P, N-(2-Methacryloyloxyethyl)-9-methylantracene carbamate-2-methacryloxyethyl acetate copolymer 216989-13-8P, 9-Anthracene methacrylate-2-(methacryloyloxy)ethylisocyanate copolymer 216989-14-9P, N-(2-Methacryloyloxyethyl)-9-methylantracene carbamate-methyl methacrylate-methacryloxyethyl isocyanate copolymer
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(composition for antireflection or light absorption film)

IT 62-53-3D, Aniline, reaction product with poly(2-methacryloyloxyethylisocyanate) 63-74-1D, 4-Aminobenzenesulfonamide, reaction product with poly(2-methacryloyloxyethylisocyanate) 90-15-3D, 1-Hydroxynaphthalene, reaction product with poly(2-methacryloyloxyethylisocyanate) 95-03-4D, 2-Amino-4-chloroanisole, reaction product with poly(2-methacryloyloxyethylisocyanate) 108-95-2D, Phenol, reaction product with poly(2-methacryloyloxyethylisocyanate), reactions 134-32-7D, 1-Aminonaphthalene, reaction product with poly(2-methacryloyloxyethylisocyanate) 610-49-1D, 1-Aminoanthracene, reaction product with poly(2-methacryloyloxyethylisocyanate) 708-06-5D, 2-Hydroxynaphthaldehyde, reaction product with poly(2-methacryloyloxyethylisocyanate) 782-45-6D, 4-Aminobenzanilide, reaction product with poly(2-methacryloyloxyethylisocyanate) 1468-95-7D, 9-Hydroxymethylantracene, reaction product with poly(2-methacryloyloxyethylisocyanate) 1576-43-8D, 4-Hydroxybenzenesulfonamide, reaction product with poly(2-methacryloyloxyethylisocyanate) 1689-82-3D, 4-Hydroxyazobenzene, reaction product with poly(2-methacryloyloxyethylisocyanate) 3743-23-5D, 2-Hydroxy-4-chloroanisole, reaction product with poly(2-methacryloyloxyethylisocyanate) 6373-73-5D, reaction product with poly(2-methacryloyloxyethylisocyanate) 14121-97-2D, 4-Hydroxybenzanilide, reaction product with poly(2-methacryloyloxyethylisocyanate)

RL: RCT (Reactant); RACT (Reactant or reagent)

(composition for antireflection or light absorption film)

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 21 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1998:708787 CAPLUS

DOCUMENT NUMBER: 129:337640

TITLE: Negative-working image recording material

INVENTOR(S): Kunita, Kazuto; Aoshima, Keitaro; Nakamura, Ippei; Nakamura, Tatsuo

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 69 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 874282	A1	19981028	EP 1998-107210	19980421
EP 874282	B1	20031210		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 10293401	A2	19981104	JP 1997-103647	19970421
US 6083658	A	20000704	US 1998-62643	19980420

PRIORITY APPLN. INFO.:

JP 1997-103647 A 19970421

AB A neg.-working image recording material comprises (A) a compound which acts as a **crosslinking** agent in the presence of an acid, (B) a binder polymer, (C) a compound which **generates** an **acid** by the action of heat, and (D) an IR absorber, wherein (A) is a phenol derivative and (B) is a polymer having in the side chain an aromatic hydrocarbon ring having directly linked thereto a hydroxyl group or an alkoxy group. The image recording material is especially useful in preparation of lithog. plates, color proofs, **resists**, and color filters.

IT 215253-67-1P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(neg.-working IR laser-sensitive photoimaging **compns.** containing aromatic polymers, phenol derivs. and)

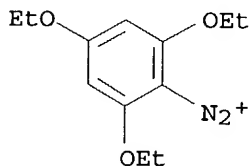
RN 215253-67-1 CAPLUS

CN Benzenediazonium, 2,4,6-triethoxy-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 215253-66-0

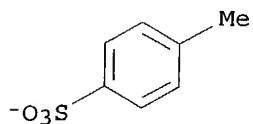
CMF C12 H17 N2 O3



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



IT 134127-48-3 137308-86-2

RL: TEM (Technical or engineered material use); USES (Uses)
(neg.-working IR laser-sensitive photoimaging compns. containing aromatic polymers, phenol derivs. and)

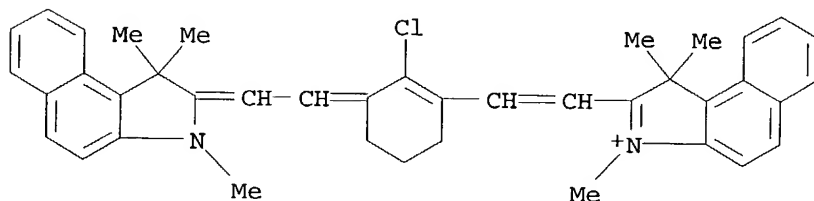
RN 134127-48-3 CAPLUS

CN 1H-Benz[e]indolium, 2-[2-[2-chloro-3-[(1,3-dihydro-1,1,3-trimethyl-2H-benz[e]indol-2-ylidene)ethylidene]-1-cyclohexen-1-yl]ethenyl]-1,1,3-trimethyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 134127-47-2

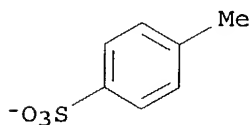
CMF C40 H40 Cl N2



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



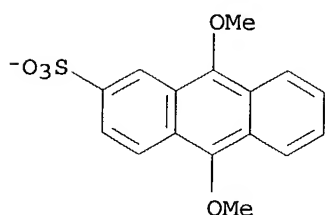
RN 137308-86-2 CAPLUS

CN Iodonium, diphenyl-, salt with 9,10-dimethoxy-2-anthracenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 137308-85-1

CMF C16 H13 O5 S



CM 2

CRN 10182-84-0

CMF C12 H10 I

Ph-I⁺Ph

IT 215253-61-5P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation and use in neg.-working IR laser-sensitive photoimaging compns. containing phenol derivs.)

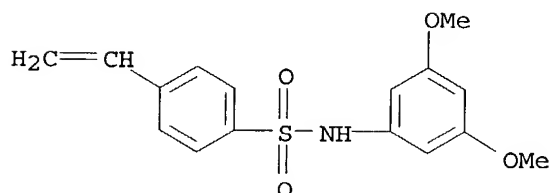
RN 215253-61-5 CAPLUS

CN Benzenesulfonamide, N-(3,5-dimethoxyphenyl)-4-ethenyl-, homopolymer (9CI)
(CA INDEX NAME)

CM 1

CRN 211742-86-8

CMF C16 H17 N O4 S



IC ICM G03F007-038

ICS G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST IR laser imaging material phenol deriv; photoresist IR laser phenol deriv; lithog plate IR laser photosensitive material; color filter IR laser photosensitive material; arom polymer IR laser imaging material

- IT Negative photoresists
(IR laser-sensitive photoimaging compns. containing aromatic polymers and phenol derivs. as)
- IT Optical filters
(color; neg.-working IR laser-sensitive photoimaging compns. containing aromatic polymers and phenol derivs. for preparation of)
- IT Printing (impact)
(neg.-working IR laser-sensitive photoimaging compns. containing aromatic polymers and phenol derivs. for color proofing in)
- IT Lithographic plates
(neg.-working IR laser-sensitive photoimaging compns. containing aromatic polymers and phenol derivs. for preparation of)
- IT Photoimaging materials
(neg.-working, IR laser-sensitive; containing aromatic polymers and phenol derivs.)
- IT 215253-67-1P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(neg.-working IR laser-sensitive photoimaging compns. containing aromatic polymers, phenol derivs. and)
- IT 68900-98-1 69415-30-1 134127-48-3 137308-86-2
RL: TEM (Technical or engineered material use); USES (Uses)
(neg.-working IR laser-sensitive photoimaging compns. containing aromatic polymers, phenol derivs. and)
- IT 24979-70-2
RL: TEM (Technical or engineered material use); USES (Uses)
(neg.-working IR laser-sensitive photoimaging compns. containing phenol derivs. and)
- IT 2937-61-3P 51906-85-5P 215253-58-0P 215253-59-1P 215253-60-4P 215253-62-6P 215253-64-8P 215253-65-9P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation and use in neg.-working IR laser-sensitive photoimaging compns. containing aromatic polymers)
- IT 200628-49-5P 215253-61-5P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation and use in neg.-working IR laser-sensitive photoimaging compns. containing phenol derivs.)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 22 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1998:590834 CAPLUS

DOCUMENT NUMBER: 129:237677

TITLE: Negative-working radiation-sensitive composition containing cyclic polyphenol compound

INVENTOR(S): Ueda, Mitsuru; Goto, Kohei; Matsubara, Minoru

PATENT ASSIGNEE(S): JSR Co., Ltd., Japan

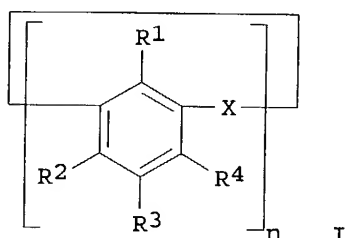
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10239843	A2	19980911	JP 1997-61894	19970228
PRIORITY APPLN. INFO.:			JP 1997-61894	19970228
OTHER SOURCE(S):		MARPAT 129:237677		

GI



AB The title **composition** contains (a) a cyclic polyphenol compound I [R1-4 = H, OH, halo, alkyl, aryl, aralkyl, alkoxy, alkenyl, acyl, alkoxy carbonyl, alkyloxy, aryloxy, CN, NO2 (these groups may be substituted), ≥ 1 of R1-4 is OH; X = single bond or CR5R6 (R5, R6 = H, alkyl, aryl); n = 3-8], (b) a **radiation acid-generating agent**, and (c) a **crosslinking agent**. The **composition** shows high photosensitivity and provides high resolution resist patterns.

IT 137308-86-2, Diphenyliodonium 9,10-dimethoxy anthracene-2-sulfonate 212614-61-4

RL: TEM (Technical or engineered material use); USES (Uses) (neg.-working **photoresist composition** containing cyclic polyphenol compound, **acid generator**, and **crosslinking agent**)

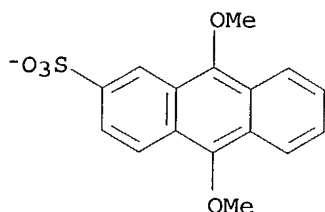
RN 137308-86-2 CAPLUS

CN Iodonium, diphenyl-, salt with 9,10-dimethoxy-2-anthracenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 137308-85-1

CMF C16 H13 O5 S



CM 2

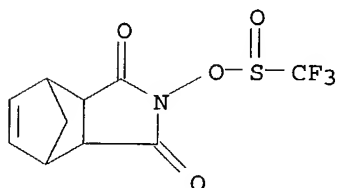
CRN 10182-84-0

CMF C12 H10 I

Ph-I⁺Ph

RN 212614-61-4 CAPLUS

CN 4,7-Methano-1H-isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2-
[[trifluoromethyl)sulfinyl]oxy]- (9CI) (CA INDEX NAME)



IC ICM G03F007-038

ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

ST neg working radiation **resist** cyclic polyphenol; **acid**
generator radiation sensitive **resist**;
crosslinking agent radiation sensitive **resist**

IT **Resists**

(neg.-working radiation-sensitive; neg.-working **photoresist**
composition containing cyclic polyphenol compound, **acid**
generator, and **crosslinking** agent)

IT 65338-98-9P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material
use); **PREP** (**Preparation**); USES (Uses)

(neg.-working **photoresist composition** containing cyclic
polyphenol compound, **acid generator**, and
crosslinking agent)

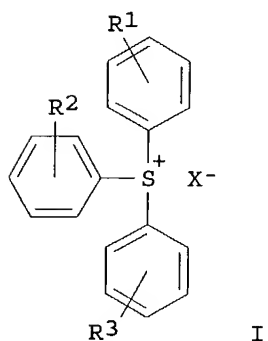
IT 91-04-3, 2,6-Bis(hydroxymethyl)-4-methylphenol 3089-11-0,
Hexamethoxymethylmelamine 137308-86-2, Diphenyliodonium

9,10-dimethoxy anthracene-2-sulfonate 212614-61-4
 RL: TEM (Technical or engineered material use); USES (Uses)
 (neg.-working **photoresist composition** containing cyclic
 polyphenol compound, **acid generator**, and
crosslinking agent)

L51 ANSWER 23 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1998:217681 CAPLUS
 DOCUMENT NUMBER: 129:10638
 TITLE: Chemically-amplified, positive-working
photoresist composition containing
crosslinked polymer and sulfonic **acid**
generator
 INVENTOR(S): Yamanaka, Tsukasa; Sato, Kenichirou; Fujinomori,
 Susumu; Aogo, Toshiaki; Uenishi, Ichiya
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 80 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10090882	A2	19980410	JP 1996-245127	19960917
TW 432256	B	20010501	TW 1997-86112855	19970905

PRIORITY APPLN. INFO.: JP 1996-245127 A 19960917
 OTHER SOURCE(S): MARPAT 129:10638
 GI



AB Title **composition** contains (A) an alkali-soluble **crosslinked**
 resin having groups that are decomposed by the action of acids to increase
 the solubility of the resin in an alkaline developing solution and (B) a
 compound

generating sulfonic acid upon irradiation with an actinic ray or radiation, I or $R_4C_6H_4I + C_6H_4R_5 X^-$ [$R_1-R_5 = H$, alkyl, cycloalkyl, alkoxy, OH, halo, SR_6 ($R_6 = \text{alkyl, aryl}$); $X^- = \text{benzenesulfonate, naphthalenesulfonate, or anthracenesulfonate anion having } \geq 1 \text{ group selected from branched or cyclic } C_{\geq 8} \text{ alkyl and alkoxy, } \geq 2 \text{ groups selected from straight-chain, branched, or cyclic } C_{4-7} \text{ alkyl and alkoxy, or } \geq 3 \text{ groups selected from straight-chain or branched } C_{1-3} \text{ alkyl and alkoxy}$]. The **comps.** show high photosensitivity and provide high-resolution **resist** patterns with good profile and thermal resistance.

IT 197447-19-1P 197595-16-7P 197595-32-7P

197667-05-3P 207464-07-1P 207464-08-2P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(chemical-amplified, pos.-working photoresist containing acid-degradable, alkali-soluble polymer and sulfonic acid generator)

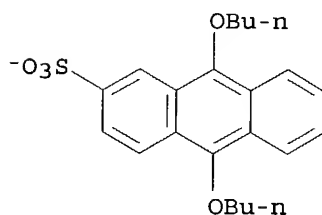
RN 197447-19-1 CAPLUS

CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with 9,10-dibutoxy-2-anthracenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 152175-83-2

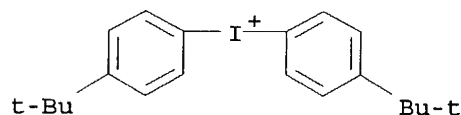
CMF C22 H25 O5 S



CM 2

CRN 61267-44-5

CMF C20 H26 I

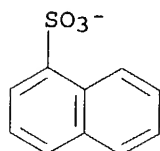


RN 197595-16-7 CAPLUS

CN Sulfonium, triphenyl-, salt with bis(1,1-dimethylethyl)-1-naphthalenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

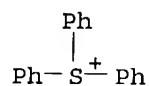
CRN 197595-15-6
CMF C18 H23 O3 S
CCI IDS



2 (D1-Bu-t)

CM 2

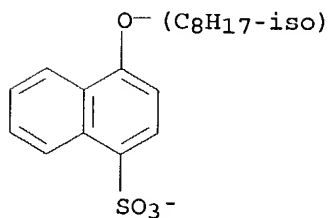
CRN 18393-55-0
CMF C18 H15 S



RN 197595-32-7 CAPLUS
CN Iodonium, diphenyl-, salt with 4-(isooctyloxy)-1-naphthalenesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

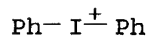
CM 1

CRN 197595-31-6
CMF C18 H23 O4 S
CCI IDS



CM 2

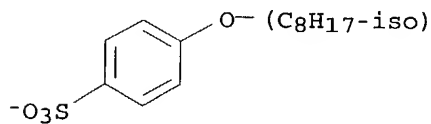
CRN 10182-84-0
CMF C12 H10 I



RN 197667-05-3 CAPLUS
CN Sulfonium, triphenyl-, salt with 4-(isooctyloxy)benzenesulfonic acid (1:1)
(9CI) (CA INDEX NAME)

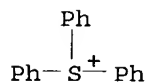
CM 1

CRN 197595-26-9
CMF C14 H21 O4 S
CCI IDS



CM 2

CRN 18393-55-0
CMF C18 H15 S



RN 207464-07-1 CAPLUS
CN Sulfonium, triphenyl-, salt with isododecylbenzenesulfonic acid (1:1)
(9CI) (CA INDEX NAME)

CM 1

CRN 54164-46-4
CMF C18 H29 O3 S
CCI IDS



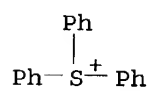
D1- (C₁₂H₂₅)

D1- SO₃⁻

CM 2

CRN 18393-55-0

CMF C18 H15 S



RN 207464-08-2 CAPLUS

CN Iodonium, diphenyl-, salt with isododecylbenzenesulfonic acid (1:1) (9CI)
(CA INDEX NAME)

CM 1

CRN 54164-46-4

CMF C18 H29 O3 S

CCI IDS



D1- (C₁₂H₂₅)

D1- SO₃⁻

CM 2

CRN 10182-84-0

CMF C12 H10 I

Ph-I⁺ Ph

IC ICM G03F007-004
ICS G03F007-00; G03F007-033; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST chem amplified pos **resist** sulfonate generator; alkali soluble resin sulfonate generator photoresist
IT Positive photoresists
(chemical-amplified, pos.-working photoresist containing acid-degradable, alkali-soluble polymer and sulfonic **acid generator**)
IT 153698-65-8P 153840-05-2P 159293-87-5P 197447-19-1P
197595-16-7P 197595-32-7P 197667-05-3P
206869-61-6P, VP 8000-butyl vinyl ether copolymer 206869-62-7P, VP 8000-tert-butyl vinyl ether-2,2-bis(4-hydroxycyclohexyl)propane copolymer
206869-63-8P, VP 8000-ethyl vinyl ether-2,2-bis(4-hydroxycyclohexyl)propane copolymer 206869-64-9P, VP 8000-tert-butyl vinyl ether-1,4-dihydroxycyclohexane copolymer 206869-66-1P, p-Hydroxystyrene-ethyl vinyl ether-tris-1,1,1-(4-hydroxycyclohexyl)ethane copolymer 207464-07-1P 207464-08-2P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**
(chemical-amplified, pos.-working photoresist containing acid-degradable, alkali-soluble polymer and sulfonic **acid generator**)

L51 ANSWER 24 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:154955 CAPLUS
DOCUMENT NUMBER: 128:250686
TITLE: **Resist composition**, pattern formation method, and semiconductor device using it
INVENTOR(S): Oikawa, Akira; Takechi, Satoshi
PATENT ASSIGNEE(S): Fujitsu Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10062993	A2	19980306	JP 1996-218742	19960820
PRIORITY APPLN. INFO.:			JP 1996-218742	19960820

AB The **composition** contains (1) a mixture of a polymer having an alicyclic hydrocarbon group and a polymer having a phenolic OH group, or a copolymer having both groups, (2) a **crosslinking** agent which **crosslinks** in the presence of an **acid**, (3) a compound **generating** an **acid** by ionization irradiation, and (4) a

solvent. The **resist** pattern is formed by coating the **composition** on a substrate, imagewise irradiating with an ionization radiation, and developing the **composition** with an alkali developer. The semiconductor device manufactured by using the **resist** pattern is also claimed. The **composition** shows high resolution toward excimer laser radiation about 248 nm and is useful for manufacture of large scale(coating process) integrated circuits.

IT 155833-78-6

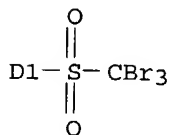
RL: TEM (Technical or engineered material use); USES (Uses)
(**acid generator**; chemical amplification-type
resist composition containing alicyclic polymer, phenolic
polymer, and **crosslinking agent**)

RN 155833-78-6 CAPLUS

CN Benzene, methyl[(tribromomethyl)sulfonyl]- (9CI) (CA INDEX NAME)



D1-Me



IC ICM G03F007-038

ICS G03F007-004; G03F007-30; H01L021-027; H01L021-312

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

Section cross-reference(s): 76

ST alicyclic hydrocarbon polymer radiation sensitive **resist**;
phenolic polymer radiation sensitive **resist**; semiconductor
device **resist compn**; **crosslinking agent**
resist compn

IT Aminoplasts

RL: TEM (Technical or engineered material use); USES (Uses)
(chemical amplification-type **resist composition** containing
alicyclic polymer, phenolic polymer, and **crosslinking agent**)

IT Semiconductor devices

(**photoresist composition** containing specified polymer for
manufacture of)

IT **Resists**

(radiation-sensitive; chemical amplification-type **resist**
composition containing alicyclic polymer, phenolic polymer, and
crosslinking agent)

IT 24979-70-2DP, Poly(p-vinylphenol), hydrogenated

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(PHM-C; chemical amplification-type **resist composition** containing alicyclic polymer, phenolic polymer, and **crosslinking agent**)

IT 52434-90-9, Tris(2,3-dibromopropyl)isocyanurate 155833-78-6

RL: TEM (Technical or engineered material use); USES (Uses)

(**acid generator**; chemical amplification-type **resist composition** containing alicyclic polymer, phenolic polymer, and **crosslinking agent**)

IT 28854-38-8P, Poly(adamantyl methacrylate) 204701-06-4P 204701-07-5P
204701-09-7P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(chemical amplification-type **resist composition** containing alicyclic polymer, phenolic polymer, and **crosslinking agent**)

IT 9003-08-1, Melamine resin

RL: TEM (Technical or engineered material use); USES (Uses)

(chemical amplification-type **resist composition** containing alicyclic polymer, phenolic polymer, and **crosslinking agent**)

L51 ANSWER 25 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1997:383568 CAPLUS

DOCUMENT NUMBER: 127:26084

TITLE: Radiation-sensitive resin **compositions** for chemically amplified **resists**

INVENTOR(S): Natsume, Norihiro; Tominaga, Tetsuo; Suzuki, Masamutsu; Isamoto, Yoshitsugu

PATENT ASSIGNEE(S): Japan Synthetic Rubber Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09090635	A2	19970404	JP 1995-264693	19950920
PRIORITY APPLN. INFO.:			JP 1995-264693	19950920

AB Claimed articles are pos.-working **compns.** comprising (A) halocycloalkanesulfonates or halocycloalkenesulfonates X_nZOSO_2R (Z = cyclic group having (n + 1) valency and containing C3-20 cycloalkyl and/or cycloalkenyl; X = halo; R = organic group; n = 1-30) as radiation-sensitive **acid-generating agents** and (B) (1) alkali-insol. resins protected by acid-dissociative group to become alkali-soluble resins or (2) alkali-soluble resins and alkali-solubility controlling compds. to be decomposed by acids. Also claimed articles are neg.-working **compns.** comprising said **acid generators**, alkali-soluble resins, and compds. to **crosslink** the alkali-soluble resins in the presence of acids. The **compns.** provide high resolution, sensitivity, stable

pattern formation and are suitable for semiconductor device manufacture
IT 190074-24-9P 190074-25-0P 190074-26-1P
190074-27-2P

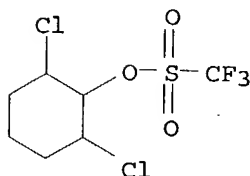
RL: MOA (Modifier or additive use); PNU (Preparation, unclassified); TEM
(Technical or engineered material use); PREP (Preparation); USES
(Uses)

(acid generator; radiation-sensitive resin

compns. containing halocycloalkanesulfonates for chemical amplified
resists)

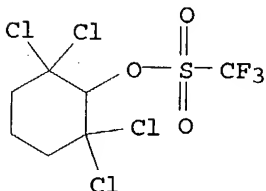
RN 190074-24-9 CAPLUS

CN Methanesulfonic acid, trifluoro-, 2,6-dichlorocyclohexyl ester (9CI) (CA
INDEX NAME)



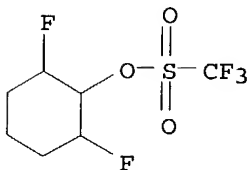
RN 190074-25-0 CAPLUS

CN Methanesulfonic acid, trifluoro-, 2,2,6,6-tetrachlorocyclohexyl ester
(9CI) (CA INDEX NAME)



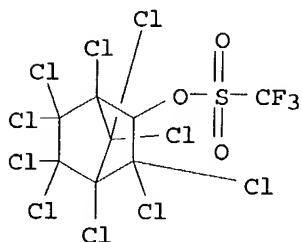
RN 190074-26-1 CAPLUS

CN Methanesulfonic acid, trifluoro-, 2,6-difluorocyclohexyl ester (9CI) (CA
INDEX NAME)

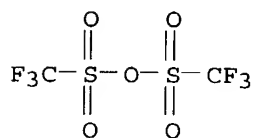


RN 190074-27-2 CAPLUS

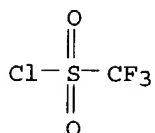
CN Methanesulfonic acid, trifluoro-, 1,3,3,4,5,5,6,6,7,7-
decachlorobicyclo[2.2.1]hept-2-yl ester (9CI) (CA INDEX NAME)



IT 358-23-6, Trifluoromethanesulfonic anhydride 421-83-0,
 Trifluoromethanesulfonyl chloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (halocycloalkanesulfonate from; for radiation-sensitive **resist**
compns.)
 RN 358-23-6 CAPLUS
 CN Methanesulfonic acid, trifluoro-, anhydride (6CI, 7CI, 8CI, 9CI) (CA
 INDEX NAME)



RN 421-83-0 CAPLUS
 CN Methanesulfonyl chloride, trifluoro- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM G03F007-039
 ICS G03F007-004; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 37, 76
 ST halocycloalkanesulfonate **acid generator** chem amplified
resist; halocycloalkenesulfonate radiation sensitive **acid**
generator resist
 IT **Resists**
 (pos.-working; radiation-sensitive resin **compns.** containing
 halocycloalkanesulfonates for chemical amplified **resists**)
 IT Negative **photoresists**

(radiation-sensitive resin **compns.** containing halocycloalkanesulfonates for chemical amplified **resists**)

IT Semiconductor devices
(radiation-sensitive resin **compns.** containing halocycloalkanesulfonates for chemical amplified **resists** for)

IT 190074-24-9P 190074-25-0P 190074-26-1P
190074-27-2P

RL: MOA (Modifier or additive use); PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; **USES** (Uses)

(acid generator; radiation-sensitive resin **compns.** containing halocycloalkanesulfonates for chemical amplified **resists**)

IT 358-23-6, Trifluoromethanesulfonic anhydride 421-83-0, Trifluoromethanesulfonyl chloride 56207-45-5, 2,2,6,6-Tetrachlorocyclohexanol 190074-28-3 190074-29-4 190074-30-7

RL: RCT (Reactant); RACT (Reactant or reagent)
(halocycloalkanesulfonate from; for radiation-sensitive **resist compns.**)

IT 5292-43-3DP, tert-Butyl bromoacetate, reaction products with polyhydroxyphenol 24424-99-5DP, Di-tert-butyl dicarbonate, reaction products with polyhydroxyphenol 59269-51-1DP, Polyhydroxystyrene, butoxycarbonyl-substituted

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; **USES** (Uses)

(radiation-sensitive resin **compns.** containing halocycloalkanesulfonates for chemical amplified **resists**)

IT 159296-87-4P, tert-Butyl acrylate-p-vinylphenol copolymer 168274-87-1P, Tert-butyl acrylate-p-isopropenylphenol copolymer 182930-98-9P, Di-tert-butyl fumarate-p-vinylphenol copolymer

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; **USES** (Uses)

(radiation-sensitive resin **compns.** containing halocycloalkanesulfonates for chemical amplified **resists** for)

L51 ANSWER 26 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1997:174516 CAPLUS

DOCUMENT NUMBER: 126:179058

TITLE: Photosensitive **composition** containing acid, vinyl alcohol polymer, and photoacid-generator for photoresist

INVENTOR(S): Shinoda, Naomi; Gokochi, Tooru

PATENT ASSIGNEE(S): Tokyo Shibaura Electric Co, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

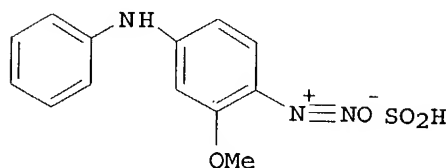
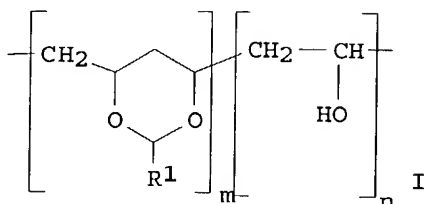
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----

JP 08328242 A2 19961213 JP 1995-136774 19950602
 PRIORITY APPLN. INFO.: JP 1995-136774 19950602
 GI



II

AB The title **composition** comprises (A) a metal ion- and/or a basic compound-containing compound, which changes its solubility after acid **crosslinking** or decomposition, (B) a photoacid-**generating** agent, and (C) an **acid**. The acid-labile compound may be water-soluble and has a repeating unit I (R1 = H, monovalent organic group; m, n

= integer) or [CH2CH(OH)]n. The **composition** shows high photosensitivity even if it is contaminated with metal ions and basic compds. Thus, H2SO4 and II were added to an aqueous poly(vinyl butyral) solution

(Na+ 2500 ppm) to give a **resist** solution

IT 137867-61-9, NAT 105 167095-81-0 173162-27-1
 186966-39-2

RL: TEM (Technical or engineered material use); USES (Uses)
 (photoacid-**generator**; photosensitive **composition** containing **acid**, vinyl alc. polymer, and photoacid-generator for photoresist)

RN 137867-61-9 CAPLUS

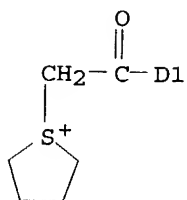
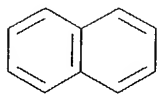
CN Thiophenium, tetrahydro-1-[2-(naphthalenyl)-2-oxoethyl]-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 137867-59-5

CMF C16 H17 O S

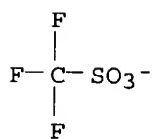
CCI IDS



CM 2

CRN 37181-39-8

CMF C F3 O3 S



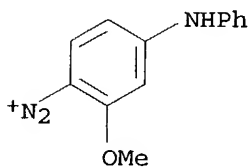
RN 167095-81-0 CAPLUS

CN Benzenediazonium, 2-methoxy-4-(phenylamino)-, salt with
4-ethylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 32445-12-8

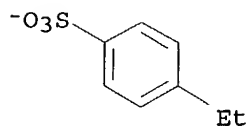
CMF C13 H12 N3 O



CM 2

CRN 18777-64-5

CMF C8 H9 O3 S



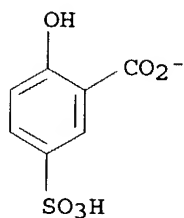
RN 173162-27-1 CAPLUS

CN Benzenediazonium, 2-methoxy-4-(phenylamino)-, salt with
2-hydroxy-5-sulfobenzoic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 46326-08-3

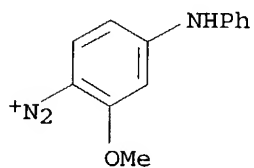
CMF C7 H5 O6 S



CM 2

CRN 32445-12-8

CMF C13 H12 N3 O



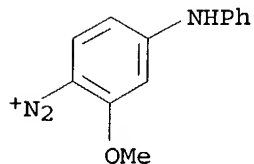
RN 186966-39-2 CAPLUS

CN Benzenediazonium, 2-methoxy-4-(phenylamino)-, benzenesulfonate (9CI) (CA
INDEX NAME)

CM 1

CRN 32445-12-8

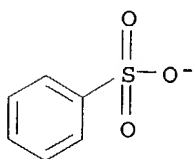
CMF C13 H12 N3 O



CM 2

CRN 3198-32-1

CMF C6 H5 O3 S



IC ICM G03F007-004
ICS G03F007-004; G03F007-038; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST photoresist acid polyvinyl alc photoacid generator;
acetal polyvinyl metal basic compd photoresist

IT Polyvinyl acetals
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(formals; photosensitive **composition** containing acid, vinyl alc. polymer, and photoacid-generator for photoresist)

IT **Photoresists**
(photosensitive **composition** containing acid, vinyl alc. polymer, and photoacid-generator for photoresist)

IT Polyvinyl acetals
Polyvinyl butyrals
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(photosensitive **composition** containing acid, vinyl alc. polymer, and photoacid-generator for photoresist)

IT Acids, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(photosensitive **composition** containing acid, vinyl alc. polymer, and photoacid-generator for photoresist)

IT Bases, uses
Metals, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(vinyl alc. polymer containing; photosensitive **composition** containing acid, vinyl alc. polymer, and photoacid-generator for photoresist)

IT 137867-61-9, NAT 105 167095-81-0 173162-27-1

180574-69-0 186966-39-2

RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid-generator; photosensitive **composition** containing
acid, vinyl alc. polymer, and photoacid-generator for
photoresist)

IT 56-82-6DP, Glyceraldehyde, cyclic acetals with poly(vinyl alc.)
598-35-6DP, Lactaldehyde, cyclic acetals with poly(vinyl alc.)
4170-30-3DP, Crotonaldehyde, cyclic acetals with poly(vinyl alc.)
186966-40-5P, tert-Butyl methacrylate-menthyl methacrylate copolymer
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)

(photosensitive **composition** containing acid, vinyl alc. polymer, and
photoacid-generator for photoresist)

IT 66-25-1D, Hexanal, cyclic acetals with poly(vinyl alc.) 75-87-6D,
Chloral, cyclic acetals with poly(vinyl alc.) 76-36-8D, Butylchloral,
cyclic acetals with poly(vinyl alc.) 78-84-2D, Isobutyraldehyde, cyclic
acetals with poly(vinyl alc.) 78-85-3D, Methacrolein, cyclic acetals
with poly(vinyl alc.) 79-02-7D, Dichloroacetaldehyde, cyclic acetals
with poly(vinyl alc.) 100-52-7D, Benzaldehyde, cyclic acetals with
poly(vinyl alc.), uses 104-55-2D, cyclic acetals with poly(vinyl alc.)
107-02-8D, Acrylaldehyde, cyclic acetals with poly(vinyl alc.)
107-20-0D, Chloroacetaldehyde, cyclic acetals with poly(vinyl alc.)
110-62-3D, Valeraldehyde, cyclic acetals with poly(vinyl alc.)
111-71-7D, Heptanal, cyclic acetals with poly(vinyl alc.) 112-31-2D,
Decanal, cyclic acetals with poly(vinyl alc.) 115-17-3D, Bromal, cyclic
acetals with poly(vinyl alc.) 123-38-6D, Propionaldehyde, cyclic acetals
with poly(vinyl alc.) 124-13-0D, Octanal, cyclic acetals with poly(vinyl
alc.) 124-19-6D, Nonanal, cyclic acetals with poly(vinyl alc.)
141-46-8D, Glycolaldehyde, cyclic acetals with poly(vinyl alc.)
298-12-4D, cyclic acetals with poly(vinyl alc.) 590-86-3D,
Isovaleraldehyde, cyclic acetals with poly(vinyl alc.) 1115-11-3D,
2-Methyl-2-butenal, cyclic acetals with poly(vinyl alc.) 7637-07-2,
Boron trifluoride, uses 7647-01-0, Hydrochloric acid, uses 7664-38-2,
Phosphoric acid, uses 7664-93-9, Sulfuric acid, uses 7697-37-2, Nitric
acid, uses 28777-87-9D, Hydroxybenzaldehyde, cyclic acetals with
poly(vinyl alc.) 30678-61-6D, Naphthaldehyde, cyclic acetals with
poly(vinyl alc.)

RL: TEM (Technical or engineered material use); USES (Uses)
(photosensitive **composition** containing acid, vinyl alc. polymer, and
photoacid-generator for photoresist)

IT 7440-23-5, Sodium, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(vinyl alc. polymer containing; photosensitive **composition** containing
acid, vinyl alc. polymer, and photoacid-generator for photoresist)

L51 ANSWER 27 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:985945 CAPLUS

DOCUMENT NUMBER: 124:18424

TITLE: Resist **composition** for deep
ultraviolet light

INVENTOR(S): Urano, Fumiyoshi; Yasuda, Takanori; Katsuyama, Akiko;
Yamashita, Kazuhiro

PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Japan; Matsushita Electric Industrial Co., Ltd.
 SOURCE: Eur. Pat. Appl., 31 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 675410	A1	19951004	EP 1995-301946	19950323
EP 675410	B1	19990804		
R: DE, FR, GB				
JP 07319155	A2	19951208	JP 1995-83199	19950315
JP 2847479	B2	19990120		
US 5695910	A	19971209	US 1996-702805	19960826
US 5780206	A	19980714	US 1997-898086	19970723
PRIORITY APPLN. INFO.:			JP 1994-80957	19940328
			US 1995-407946	19950322
			US 1996-702805	19960826

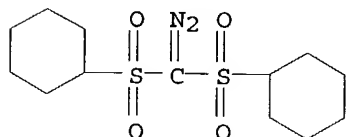
OTHER SOURCE(S): MARPAT 124:18424

AB A **resist composition** for deep UV light comprising (a) one of the following resin components (i)-(iii): (i) a resin which becomes alkali-soluble by eliminating protective groups by the action of an acid, (ii) a combination of an alkali-soluble resin and a dissoln.-inhibiting compound, and (iii) a combination of an alkali-soluble resin and a **crosslinkable** compound, (b) an **acid generator**, (c) a special anthracene derivative, and (d) a solvent, is suitable for forming a pattern using deep UV light, KrF excimer laser light, etc., on a highly reflective substrate having level difference due to absorption of undesirable reflected deep UV light.

IT 138529-81-4P, Bis(cyclohexylsulfonyl)diazomethane
 138529-84-7P, Bis(tert-butylsulfonyl)diazomethane
 138529-91-6P, 2-Cyclohexylcarbonyl-2-(p-toluenesulfonyl)propane
 RL: DEV (Device component use); IMF (Industrial manufacture); **PREP** (Preparation); USES (Uses)
 (resist composition for deep UV light comprising)

RN 138529-81-4 CAPLUS

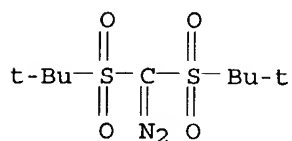
CN Cyclohexane, 1,1'-[(diazomethylene)bis(sulfonyl)]bis- (9CI) (CA INDEX NAME)



RN 138529-84-7 CAPLUS

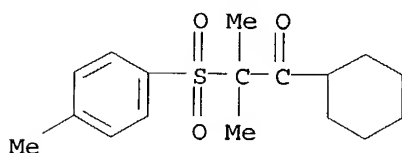
CN Propane, 2,2'-[(diazomethylene)bis(sulfonyl)]bis[2-methyl- (9CI) (CA

INDEX NAME)



RN 138529-91-6 CAPLUS

CN 1-Propanone, 1-cyclohexyl-2-methyl-2-[(4-methylphenyl)sulfonyl]- (9CI)
(CA INDEX NAME)



IT 941-55-9P, p-Toluenesulfonylazide 7144-89-0P

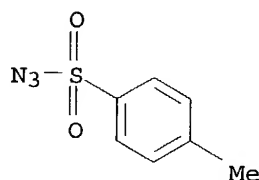
82386-41-2P, Bis(cyclohexylsulfonyl)methane

RL: IMF (Industrial manufacture); RCT (Reactant); PREP
(Preparation); RACT (Reactant or reagent)

(resist composition for deep UV light from)

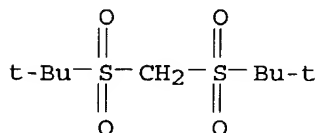
RN 941-55-9 CAPLUS

CN Benzenesulfonyl azide, 4-methyl- (9CI) (CA INDEX NAME)



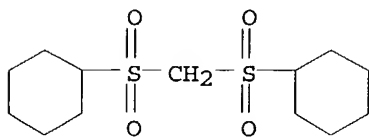
RN 7144-89-0 CAPLUS

CN Propane, 2,2'-[methylenebis(sulfonyl)]bis[2-methyl- (9CI) (CA INDEX NAME)

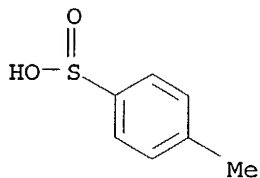


RN 82386-41-2 CAPLUS

CN Cyclohexane, 1,1'-[methylenebis(sulfonyl)]bis- (9CI) (CA INDEX NAME)



IT 824-79-3, Sodium p-Toluenesulfinate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (resist composition for deep UV light from)
 RN 824-79-3 CAPLUS
 CN Benzenesulfinic acid, 4-methyl-, sodium salt (9CI) (CA INDEX NAME)



● Na

IC ICM G03F007-004
 ICS G03F007-09
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 76
 ST photoresist compn deep UV anthracene
 IT Electric circuits
 (integrated, resist composition for deep UV light)
 IT Resists
 (photo-, UV, resist composition for deep UV light)
 IT 16430-32-3P, 9-Anthrylmethyl acetate 51513-48-5P 86170-50-5P,
 9-Ethoxymethylanthracene 129674-22-2P, p-tert-Butoxycarbonyloxystyrene-p-
 hydroxystyrene copolymer 131567-30-1P 138529-81-4P,
 Bis(cyclohexylsulfonyl)diazomethane 138529-84-7P,
 Bis(tert-butylsulfonyl)diazomethane 138529-91-6P,
 2-Cyclohexylcarbonyl-2-(p-toluenesulfonyl)propane 147995-74-2P
 156862-09-8P, 1,3,5-Tris-(isopropoxymethoxy)benzene 158593-28-3P,
 Poly(p-(1-ethoxyethoxy)styrene-p-hydroxystyrene) 159377-76-1P
 166597-59-7P, 2,2-Bis(4-(1-ethoxyethoxy)phenyl)propane 171429-57-5P
 171429-58-6P 171429-59-7P 171429-60-0P 171429-61-1P
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP
 (Preparation); USES (Uses)
 (resist composition for deep UV light comprising)
 IT 941-55-9P, p-Toluenesulfonylazide 1125-71-9P 1127-39-5P,

2-Chloro-1-cyclohexyl-2-methyl-1-propanone 3587-58-4P,
 Isopropoxymethylchloride 7144-89-0P 22689-05-0P,
 9-Anthracenepropanol 24463-19-2P, 9-Chloromethylantracene
 82386-41-2P, Bis(cyclohexylsulfonyl)methane 156862-04-3P
 171429-62-2P 171429-63-3P

RL: IMF (Industrial manufacture); RCT (Reactant); **PREP**
 (Preparation); RACT (Reactant or reagent)

(resist composition for deep UV light from)

IT 64-17-5, Ethanol, reactions 75-36-5, Acetyl chloride 79-03-8,
 Propanoyl chloride 80-05-7, reactions 109-86-4, 2-Methoxyethanol
 109-92-2 110-80-5, 2-Ethoxyethanol 121-44-8, reactions
 824-79-3, Sodium p-Toluenesulfinate 874-60-2, p-Methylbenzoyl
 chloride 1468-95-7, 9-Anthracenemethanol 7719-09-7, Thionyl chloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (resist composition for deep UV light from)

L51 ANSWER 28 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:808224 CAPLUS

DOCUMENT NUMBER: 123:270794

TITLE: Chemical-amplification **photoresist**
composition for semiconductor device
 manufacture

INVENTOR(S): Urano, Fumyoshi; Fuje, Hirotoshi; Negishi, Takaaki

PATENT ASSIGNEE(S): Wako Pure Chem Ind Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

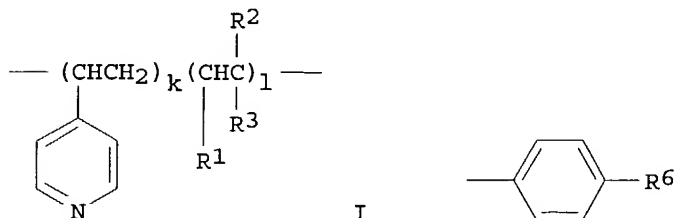
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07128859	A2	19950519	JP 1993-298995	19931104
PRIORITY APPLN. INFO.:			JP 1993-298995	19931104

GI



AB The **resist composition** consists of a resin selected from
 (i)-(iii): (i) a resin which becomes alkali-soluble by elimination of a
 protecting group with an acid, (ii) an alkali-soluble resin and a compound
 which becomes alkali-soluble by elimination of a protecting group with an

acid, (iii) an alkali-soluble resin and a compound which **crosslinks** with the resin to become alkali-insol., an **acid-generating** photosensitive compound, p-vinylpyridine polymer I [R1 = H or II (R4 = H, C1-4 linear or branched alkyl, alkoxy, halo); R2 = H, Me; R3 = H, COOR5 (R5 = C1-4 linear or branched alkyl, 2-hydroxyethyl); k ≥ 1 , l ≥ 0] as a sensitivity-adjusting agent, and a solvent.

The **resist composition** is useful in semiconductor patterning using ≤ 300 nm far UV or KrF excimer laser beams (248.4 nm). A high-resolution patterning even in resolution limit is obtained.

IT 14159-45-6 56817-85-7 138529-81-4,

Bis(cyclohexylsulfonyl)diazomethane 138529-84-7

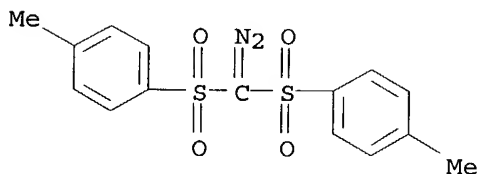
138529-91-6, 2-Cyclohexylcarbonyl-2-(p-toluenesulfonyl)propane

RL: TEM (Technical or engineered material use); USES (Uses)

(chemical-amplified photoresists containing p-vinylpyridine polymer for high resolution patterning in semiconductor device manufacture)

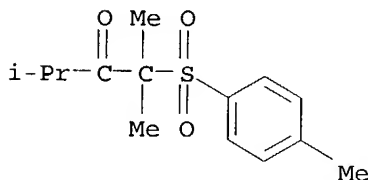
RN 14159-45-6 CAPLUS

CN Benzene, 1,1'-[(diazomethylene)bis(sulfonyl)]bis[4-methyl- (9CI) (CA INDEX NAME)



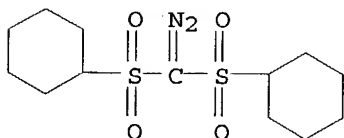
RN 56817-85-7 CAPLUS

CN 3-Pentanone, 2,4-dimethyl-2-[(4-methylphenyl)sulfonyl]- (9CI) (CA INDEX NAME)

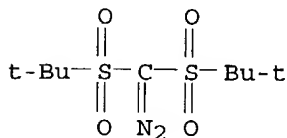


RN 138529-81-4 CAPLUS

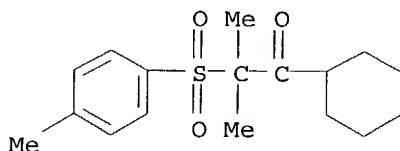
CN Cyclohexane, 1,1'-[(diazomethylene)bis(sulfonyl)]bis- (9CI) (CA INDEX NAME)



RN 138529-84-7 CAPLUS
 CN Propane, 2,2'-[(diazomethylene)bis(sulfonyl)]bis[2-methyl- (9CI) (CA INDEX NAME)



RN 138529-91-6 CAPLUS
 CN 1-Propanone, 1-cyclohexyl-2-methyl-2-[(4-methylphenyl)sulfonyl]- (9CI) (CA INDEX NAME)



IC ICM G03F007-039
 ICS G03F007-004; G03F007-028; G03F007-038; H01L021-312
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 76
 ST photoresist semiconductor device vinylpyridine polymer
 IT Semiconductor devices
 (chemical-amplified photoresists containing p-vinylpyridine polymer for high resolution patterning in semiconductor device manufacture)
 IT **Resists**
 (photo-, chemical-amplification; chemical-amplified photoresists containing p-vinylpyridine polymer for high resolution patterning in semiconductor device manufacture)
 IT 97-64-3, Ethyl lactate 111-96-6, Diethylene glycol dimethyl ether 3852-09-3, Methyl 3-methoxypropionate 84540-57-8, Propylene glycol monomethyl ether acetate
 RL: NUU (Other use, unclassified); USES (Uses)
 (chemical-amplified photoresists containing p-vinylpyridine polymer for high resolution patterning in semiconductor device manufacture)
 IT 25232-41-1P, Poly(p-vinylpyridine) 26100-41-4P 149642-75-1P 156862-09-8P, 1,3,5-Tris(isopropoxymethoxy)benzene 168904-82-3P 168904-83-4P
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
 (chemical-amplified photoresists containing p-vinylpyridine polymer for high resolution patterning in semiconductor device manufacture)
 IT 14159-45-6 24979-70-2, Poly(p-vinylphenol) 56817-85-7

64309-46-2 123589-22-0, p-tert-Butoxystyrene-p-hydroxystyrene copolymer
 138529-81-4, Bis(cyclohexylsulfonyl)diazomethane
 138529-84-7 138529-91-6, 2-Cyclohexylcarbonyl-2-(p-toluenesulfonyl)propane 142940-36-1 158593-28-3

RL: TEM (Technical or engineered material use); USES (Uses)

(chemical-amplified photoresists containing p-vinylpyridine polymer for high resolution patterning in semiconductor device manufacture)

L51 ANSWER 29 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1994:712038 CAPLUS

DOCUMENT NUMBER: 121:312038

TITLE: Negative-working **photoresist composition**

INVENTOR(S): Nakano, Yoshiko; Takeyama, Naomiki; Ueda, Juji;
 Kusumoto, Takehiro; Ueki, Hiromi

PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

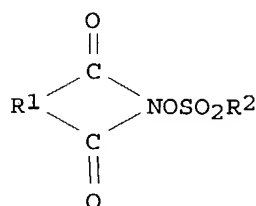
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

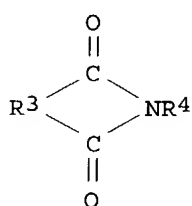
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
JP 06214391	A2	19940805	JP 1993-5796	19930118
PRIORITY APPLN. INFO.:			JP 1993-5796	19930118
OTHER SOURCE(S):	MARPAT 121:312038			

GI



I



II

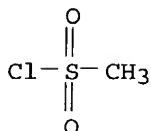
AB The **composition** comprises a photo-acid generator containing ≥ 1 sulfonic acid ester of N-hydroxyimide compound(A), an alkali-soluble resin, a **crosslinking** agent, and an imide compound The compound A may be I [R1 = (substituted) arylene, alkylene, alkenylene; R2 = (substituted) alkyl, aryl] and the imide compound may be II [R3 = (substituted) arylene, alkylene, alkenylene; R4 = H, (substituted) alkyl, aryl]. The **composition** shows high sensitivity and resolution at far UV resin (including excimer laser).

IT 124-63-0, Methanesulfonyl chloride

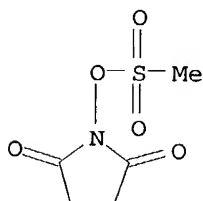
RL: RCT (Reactant); RACT (Reactant or reagent)

(esterification of hydroxysuccinimide)

RN 124-63-0 CAPLUS
CN Methanesulfonyl chloride (6CI, 8CI, 9CI) (CA INDEX NAME)



IT 54769-40-3P
RL: MOA (Modifier or additive use); PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(photo acid generator; photoresist composition containing hydroxyimide sulfonate and imide compound)
RN 54769-40-3 CAPLUS
CN 2,5-Pyrrolidinedione, 1-[(methylsulfonyl)oxy]- (9CI) (CA INDEX NAME)



IC ICM G03F007-038
ICS G03F007-004; G03F007-031; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST photoresist imide sulfonate acid generator
IT **Resists**
(photo-, photoresist composition containing hydroxyimide sulfonate and imide compound)
IT 3089-11-0P, Hexamethylolmelamine hexamethyl ether
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(crosslinking agent; photoresist composition containing hydroxyimide sulfonate and imide compound)
IT 124-63-0, Methanesulfonyl chloride 6066-82-6, N-Hydroxysuccinimide
RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification of hydroxysuccinimide)
IT 531-18-0, Hexamethylolmelamine
RL: RCT (Reactant); RACT (Reactant or reagent)
(etherification of hexamethylolmelamine)
IT 54769-40-3P
RL: MOA (Modifier or additive use); PNU (Preparation, unclassified); TEM

(Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(photo acid generator; photoresist

composition containing hydroxyimide sulfonate and imide compound)

IT 123-56-8, Succinimide

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(photoresist composition containing hydroxyimide sulfonate and imide compound)

IT 24979-70-2, Maruka Lyncur PHM-C 24979-74-6, Maruka Lyncur CST 70

RL: TEM (Technical or engineered material use); USES (Uses)

(photoresist composition containing hydroxyimide sulfonate and imide compound)

L51 ANSWER 30 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1994:641837 CAPLUS

DOCUMENT NUMBER: 121:241837

TITLE: Photoresist compositions using weak and strong acid-generating agents

INVENTOR(S): Ueki, Hiromi; Takeyama, Naomiki; Ueda, Juji; Kusumoto, Takehiro; Nakano, Yoshiko

PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06130666	A2	19940513	JP 1992-278477	19921016
PRIORITY APPLN. INFO.:			JP 1992-278477	19921016

AB The photoresist compns. containing an alkali-soluble resin, a crosslinking agent, and an acid-generating agent comprising ≥ 1 compound which generates a weak acid of pKa 3-6 by exposure and ≥ 1 compound which generates a strong acid of pKa -0.7--10 by exposure. The decrease in line width is suppressed if the post-baking process delays after exposure, and the resist gives patterns with dimensional stability. Thus, a photoresist comprised p-isopropenylphenol cyclic dimer-HCHO novolak resin, hexamethylolmelamine hexamethyl ether, diphenyldisulfone, and 2-diazido-1,3-indandione.

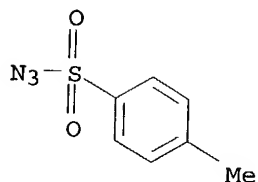
IT 941-55-9P, p-Toluenesulfonyl azide

RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)

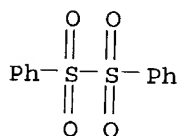
(preparation and reaction of, with indandione)

RN 941-55-9 CAPLUS

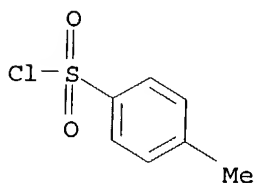
CN Benzenesulfonyl azide, 4-methyl- (9CI) (CA INDEX NAME)



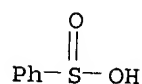
IT 10409-06-0P, Diphenyldisulfone
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of, acid generator, chemical amplified resist containing)
RN 10409-06-0 CAPLUS
CN Disulfone, diphenyl (9CI) (CA INDEX NAME)



IT 98-59-9, p-Toluenesulfonyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with sodium azide)
RN 98-59-9 CAPLUS
CN Benzenesulfonyl chloride, 4-methyl- (9CI) (CA INDEX NAME)



IT 873-55-2, Sodium benzenesulfinatate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with sulfonyl chloride)
RN 873-55-2 CAPLUS
CN Benzenesulfinic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)



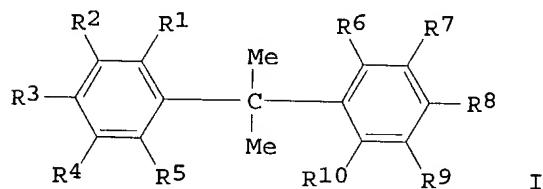
● Na

- IC ICM G03F007-038
- ICS G03F007-004; G03F007-028; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- Section cross-reference(s): 76
- ST **photoresist compn acid generating agent**
- IT **Resists**
 - (photo-, chemical amplified, containing weak and strong acid-generating agents)
- IT 108388-54-1
 - RL: TEM (Technical or engineered material use); USES (Uses)
 - (chemical amplified photoresist from)
- IT 67-56-1, Methanol, reactions
 - RL: RCT (Reactant); RACT (Reactant or reagent)
 - (etherification of, with hexamethylolmelamine)
- IT 531-18-0P, Hexamethylolmelamine
 - RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 - (preparation and etherification of, with methanol)
- IT 941-55-9P, p-Toluenesulfonyl azide
 - RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 - (preparation and reaction of, with indandione)
- IT 1807-49-4P 10409-06-0P, Diphenyldisulfone
 - RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 - (preparation of, acid generator, chemical amplified resist containing)
- IT 3089-11-0P, Hexamethylolmelamine hexamethyl ether
 - RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 - (preparation of, crosslinking agent, chemical amplified photoresist from)
- IT 7791-25-5, Sulfonyl chloride
 - RL: RCT (Reactant); RACT (Reactant or reagent)
 - (reaction of, with benzenesulfinate)
- IT 108-78-1P, Melamine, preparation
 - RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 - (reaction of, with formaldehyde)

- IT 50-00-0, Formaldehyde, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with melamine)
- IT 98-59-9, p-Toluenesulfonyl chloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with sodium azide)
- IT 873-55-2, Sodium benzenesulfinate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with sulfonyl chloride)
- IT 26628-22-8, Sodium azide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with toluenesulfonyl chloride)
- IT 606-23-5, 1,3-Indandione
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with toluenesulfonylazide)

L51 ANSWER 31 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1994:496029 CAPLUS
 DOCUMENT NUMBER: 121:96029
 TITLE: Negative-working photoresist composition
 INVENTOR(S): Ueda, Juji; Takeyama, Naomoto; Ueki, Hiromi; Kusumoto, Takehiro
 PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

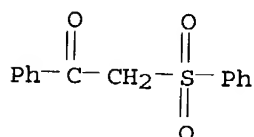
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05241342	A2	19930921	JP 1992-44553	19920302
PRIORITY APPLN. INFO.: GI			JP 1992-44553	19920302



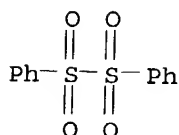
AB The title photoresist composition comprises an alkali-soluble resin based on the condensation between an aldehyde and a phenol and containing I [R1-10 = H, halo, alkyl, OH, with the proviso ≥ 1 of R1-10

is OH, ≥ 2 of the positions o- and p- to OH are occupied by Hs], a crosslinking agent, and an acid generator. The neg.-working resist composition is useful in far-UV lithog., and is characterized by good resolution, sensitivity, and heat resistance.

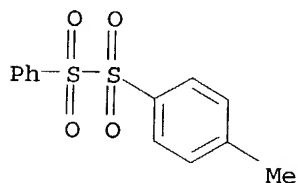
IT 3406-03-9, α -Phenylsulfonylacetophenone
 RL: USES (Uses)
 (acid generator, photoresist composition containing)
 RN 3406-03-9 CAPLUS
 CN Ethanone, 1-phenyl-2-(phenylsulfonyl)- (9CI) (CA INDEX NAME)



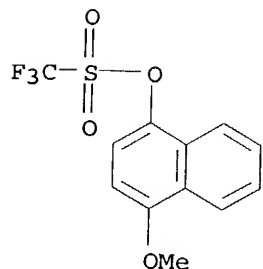
IT 10409-06-0P, Diphenyldisulfone 78190-78-0P, Phenyl p-tolyl disulfone 112183-02-5P 124737-93-5P, p-Methoxyphenyl phenyl disulfone
 RL: PREP (Preparation)
 (preparation of, as acid generator, photoresist composition containing)
 RN 10409-06-0 CAPLUS
 CN Disulfone, diphenyl (9CI) (CA INDEX NAME)



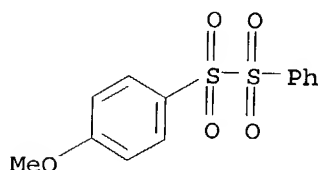
RN 78190-78-0 CAPLUS
 CN Disulfone, 4-methylphenyl phenyl (9CI) (CA INDEX NAME)



RN 112183-02-5 CAPLUS
 CN Methanesulfonic acid, trifluoro-, 4-methoxy-1-naphthalenyl ester (9CI)
 (CA INDEX NAME)



RN 124737-93-5 CAPLUS
 CN Disulfone, 4-methoxyphenyl phenyl (9CI) (CA INDEX NAME)



IC ICM G03F007-038
 ICS G03F007-004; G03F007-028; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST photoresist neg working far UV; phenolic resin photoresist far UV
 IT Lithography
 (photo-, far-UV, neg.-working resist compns. for)
 IT **Resists**
 (photo-, neg.-working, for far-UV)
 IT 3406-03-9, α -Phenylsulfonylacetophenone 6542-67-2,
 2,4,6-Tris(trichloromethyl)-s-triazine
 RL: USES (Uses)
 (acid generator, photoresist composition containing)
 IT 91-04-3, 2,6-Bis(hydroxymethyl)-p-cresol 3089-11-0, Hexamethylolmelamine hexamethyl ether
 RL: MOA (Modifier or additive use); USES (Uses)
 (crosslinking agent, photoresist containing)
 IT 10409-06-0P, Diphenyldisulfone 78190-78-0P, Phenyl p-tolyl disulfone 112183-02-5P 124737-93-5P,
 p-Methoxyphenyl phenyl disulfone
 RL: **PREP (Preparation)**
 (preparation of, as acid generator, photoresist composition containing)
 IT 25085-75-0P, Bisphenol A-formaldehyde copolymer
 RL: **PREP (Preparation)**
 (preparation of, photoresist composition from)

L51 ANSWER 32 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1993:112751 CAPLUS
 DOCUMENT NUMBER: 118:112751
 TITLE: Aqueous base developable deep-UV **resist**
 based on chemically amplified **crosslinking**
 of phenolic resin
 AUTHOR(S): Schaedeli, U.; Holzwarth, H.; Muenzel, N.; Schulz, R.
 CORPORATE SOURCE: Marly Res. Cent., Ciba-Geigy, Inc., Fribourg, 1701,
 Switz.
 SOURCE: Polymer Engineering and Science (1992), 32(20), 1523-9
 CODEN: PYESAZ; ISSN: 0032-3888
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The principle of chemical amplification proved to be successful for the
 design of highly sensitive, high resolution **resist** material. In
 many cases a strong Brønsted **acid**, **generated** by
 photolysis of onium salt precursors, was used to catalytically cleave an
 acid labile blocking moiety. A new approach to neg. tone **resist**
 is based on acid catalyzed cleavage of acetal blocked aromatic aldehydes,
 which act as latent electrophiles and, under the influence of strong acid,
 react with the surrounding phenolic resin. If the acetal is
 polyfunctional or incorporated in a phenolic polymer chain, an increase in
 mol. weight, due to **crosslinking**, was observed. The **resist**
 is highly sensitive and allows the resolution of 0.5 µm features without
 swelling.

IT 66003-78-9, Triphenylsulfonium triflate

RL: USES (Uses)

(deep-UV **photoresist** composition containing, chemical amplified
crosslinking in)

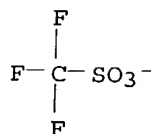
RN 66003-78-9 CAPLUS

CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI)
 (CA INDEX NAME)

CM 1

CRN 37181-39-8

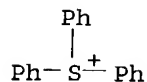
CMF C F3 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



IT 145296-23-7P

RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in model study for **crosslinking** reaction
between bifunctional blocked benzaldehydes and phenolic resins)

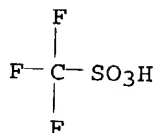
RN 145296-23-7 CAPLUS

CN Methanesulfonic acid, trifluoro-, compd. with 2-phenyl-1,3-dioxolane (1:1)
(9CI) (CA INDEX NAME)

CM 1

CRN 1493-13-6

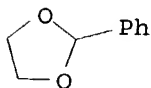
CMF C H F3 O3 S



CM 2

CRN 936-51-6

CMF C9 H10 O2



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

ST photoresist chem amplified **crosslinking** phenolic resin;
photolithog deep UV phenolic resin **crosslinking**

IT Resists

(photo-, deep-UV, aqueous base developable, based on chemical amplified
crosslinking of phenolic resin)

IT 5660-56-0 24979-70-2, Poly(4-hydroxystyrene) 66003-78-9,
Triphenylsulfonium triflate

RL: USES (Uses)

(deep-UV photoresist composition containing, chemical amplified
crosslinking in)

IT 29323-60-2 146192-92-9
 RL: USES (Uses)
 (deep-UV photoresist composition from, chemical amplified crosslinking in)

IT 145296-23-7P
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in model study for crosslinking reaction between bifunctional blocked benzaldehydes and phenolic resins)

IT 936-51-6
 RL: USES (Uses)
 (model compound for crosslinking reaction between bifunctional blocked benzaldehydes and phenolic resins)

IT 2628-17-3 19693-76-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (polymerization of, aqueous base developable deep-UV resist from)

L51 ANSWER 33 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1992:48918 CAPLUS
 DOCUMENT NUMBER: 116:48918
 TITLE: Positive acting photoresist and method of producing same
 INVENTOR(S): Winkle, Mark Robert
 PATENT ASSIGNEE(S): Rohm and Haas Co., USA
 SOURCE: Eur. Pat. Appl., 17 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 425142	A2	19910502	EP 1990-311172	19901011
EP 425142	A3	19911016		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
US 5650261	A	19970722	US 1989-428820	19891027
CA 2027628	AA	19910428	CA 1990-2027628	19901015
ZA 9008251	A	19910731	ZA 1990-8251	19901016
AU 9064698	A1	19910502	AU 1990-64698	19901018
AU 642915	B2	19931104		
NO 9004562	A	19910429	NO 1990-4562	19901023
IL 96109	A1	19950315	IL 1990-96109	19901025
BR 9005430	A	19910917	BR 1990-5430	19901026
JP 04162040	A2	19920605	JP 1990-290589	19901026
JP 3222459	B2	20011029		
CN 1054838	A	19910925	CN 1990-109643	19901027

PRIORITY APPLN. INFO.: US 1989-428820 A 19891027

AB A pos.-acting photoresist composition, capable of producing crosslinked images, comprises a mixture of (a) a film-forming, acid-hardening resin system containing ≥ 1 film-forming polymer and optionally ≥ 1 crosslinker; (b) an acid or acid-generating material; (c) a photobase-generating

compound; and (d) an optional photosensitizer. The **photoresist composition** is applied to a substrate surface and selectively exposed to actinic radiation through a photomask to produce a base, which neutralizes the acid in the exposed portion, from the photobase generator. The unexposed portions of the film are then **crosslinked** by the catalytic action of the acid upon heating the film, and the exposed portions are removed from the substrate by the action of a developer solution, leaving a **crosslinked** pos. image on the substrate. Thus, a mixture of 2-hydroxyethyl methacrylate, Me methacrylate, and Bu methacrylate was copolymd. at 105° with tert-Bu peroctoate as initiator in 1-methoxy-2-propanol solution, and the polymer solution was mixed with Cymel 300 (melamine resin **crosslinker**), dodecylbenzenesulfonic acid, 2-nitrobenzyl cyclohexylcarbamate (photobase **generator**), and phenothiazine sensitizer. The mixture was spin coated on a Si wafer and dried to a film 11 µm thick. The film was exposed through a mask to 365-nm light, baked at 100° for 15 s, and developed with acetone at ambient temperature to produce a good quality pos. image.

IT 1331-61-9, Ammonium dodecylbenzenesulfonate 1678-43-9

4124-42-9 20444-09-1, 2-Nitrobenzyl tosylate

RL: USES (Uses)

(as thermal **acid generator**, in photoresist containing **acid-hardening film**)

RN 1331-61-9 CAPLUS

CN Benzenesulfonic acid, dodecyl-, ammonium salt (8CI, 9CI) (CA INDEX NAME)



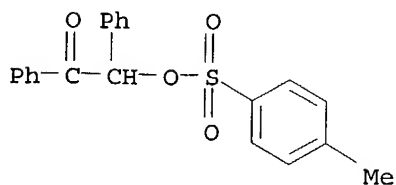
D1-SO₃H

Me-(CH₂)₁₁-D1

● NH₃

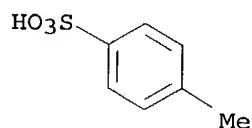
RN 1678-43-9 CAPLUS

CN Ethanone, 2-[[[4-methylphenyl)sulfonyl]oxy]-1,2-diphenyl- (9CI) (CA INDEX NAME)



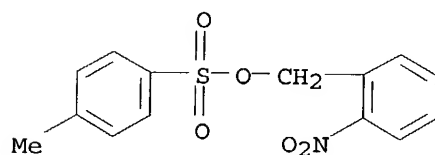
RN 4124-42-9 CAPLUS

CN Benzenesulfonic acid, 4-methyl-, ammonium salt (9CI) (CA INDEX NAME)



RN 20444-09-1 CAPLUS

CN Benzenemethanol, 2-nitro-, 4-methylbenzenesulfonate (ester) (9CI) (CA INDEX NAME)



IT 27176-87-0, Dodecylbenzenesulfonic acid

RL: USES (Uses)

(photoresist containing acid-hardening film and)

RN 27176-87-0 CAPLUS

CN Benzenesulfonic acid, dodecyl- (8CI, 9CI) (CA INDEX NAME)



D1-SO₃H

Me-(CH₂)₁₁-D1

- IC ICM G03F007-004
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 24, 37
- ST photoresist pos acting acid **crosslinking**
- IT **Crosslinking agents**
(photoresist containing acid-hardening film and)
- IT Aminoplasts
RL: USES (Uses)
(photoresist containing acid-hardening film and, as **crosslinker**)
- IT Sulfonic acids, esters
RL: USES (Uses)
(alkyl esters, as thermal **acid generator**, in photoresist containing **acid-hardening film**)
- IT Phenolic resins, uses
RL: USES (Uses)
(novolak, photoresist containing acid-hardening film of)
- IT **Resists**
(photo-, **acid-hardening film** and photobase-**generating** compound in)
- IT 52434-90-9, Tris(2,3-dibromopropyl)isocyanurate
RL: USES (Uses)
(as photo **acid generator**, in photoresist containing **acid-hardening film**)
- IT 1331-61-9, Ammonium dodecylbenzenesulfonate 1678-43-9
4124-42-9 14798-03-9D, Ammonium, salts 20444-09-1, 2-Nitrobenzyl tosylate
RL: USES (Uses)
(as thermal **acid generator**, in photoresist containing **acid-hardening film**)
- IT 612-25-9, 2-Nitrobenzyl alcohol
RL: USES (Uses)
(condensation of, with cyclohexylisocyanate)
- IT 3173-53-3, Cyclohexylisocyanate
RL: USES (Uses)
(condensation of, with nitrobenzyl alc.)
- IT 27176-87-0, Dodecylbenzenesulfonic acid
RL: USES (Uses)
(photoresist containing acid-hardening film and)

- IT 463-77-4D, Carbamic acid, derivs., esters 621-84-1, Benzylcarbamate
683-62-5, O-Carbamoylhydroxylamine 116523-50-3 138570-07-7
RL: USES (Uses)
(photoresist containing **acid-hardening** film and photobase-
generating)
- IT 9003-08-1 9011-05-6, Urea-formaldehyde copolymer 26160-89-4,
Benzoguanamine-formaldehyde copolymer 36833-16-6
RL: USES (Uses)
(photoresist containing acid-hardening film and, as **crosslinker**)
- IT 100-42-5D, polymers 3424-60-0, Pentanediamide 9002-89-5, Poly(vinyl
alcohol) 9003-01-4, Poly(acrylic acid) 9003-05-8 25014-12-4
25087-26-7, Poly(methacrylic acid) 59269-51-1, Poly(vinylphenol)
RL: USES (Uses)
(photoresist containing acid-hardening film of)
- IT 119137-03-0P
RL: **PREP (Preparation)**
(preparation of, as photobase **generator** in photoresist containing
acid-hardening film)

L51 ANSWER 34 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1990:601144 CAPLUS

DOCUMENT NUMBER: 113:201144

TITLE: Chemically amplified DUV photoresists using a new
class of photoacid generating compounds

AUTHOR(S): Pawlowski, Georg; Dammel, Ralph; Lindley, Charlet R.;
Merrem, Hans Joachim; Roeschert, Heinz; Lingnau,
Juergen

CORPORATE SOURCE: Corp. Res., Hoechst A.-G., Frankfurt/Main, D-6230,
Germany

SOURCE: Proceedings of SPIE-The International Society for
Optical Engineering (1990), 1262(Adv. Resist Technol.
Process. 7), 16-25

CODEN: PSISDG; ISSN: 0277-786X

DOCUMENT TYPE: Journal

LANGUAGE: English

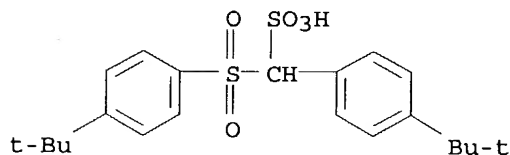
AB Photoresist materials based on chemical amplification processes are unique
with respect to their sensitivity, flexibility in design, and resolution
capability which extends down to the sub half micron region as required
for the production of ULSI devices of the next generations. These materials
meet the requirements of DUV exposure tools, and it is anticipated that
they will be used for the production of 64 MB DRAMS. The photoacid generator
(PAG) plays an important role in these complex systems. Nonionic PAG's,
 α,α' -bisarylsulfonyl diazomethanes (I) upon DUV irradiation
generate sulfonic acids capable of cleaving acid labile
dissoln. inhibitors in pos. tone DUV photoresists or **crosslinking**
acid sensitive methylol compds. in neg. tone materials. Their chemical,
photochem., and relevant phys. properties are discussed; first results on
DUV sensitive 3 component photoresist materials using I as PAG's are
presented. The high sensitivities and contrasts observed in these materials
are close to the requirements of the semiconductor industry, which makes
them viable candidates for further evaluation.

IT 130290-81-2P

RL: RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(formation and reaction of, in chemical amplified deep-UV photoresist composition containing photoacid generating compound)

RN 130290-81-2 CAPLUS

CN Benzenemethanesulfonic acid, 4-(1,1-dimethylethyl)- α -[[4-(1,1-dimethylethyl)phenyl]sulfonyl]- (9CI) (CA INDEX NAME)



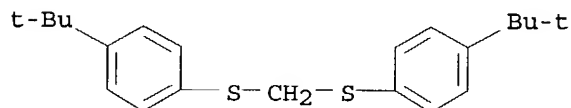
IT 18068-20-7P 56255-65-3P

RL: RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)

(formation and reaction of, in preparation of photoacid generating compound for submicron lithog.)

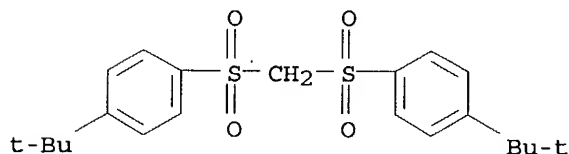
RN 18068-20-7 CAPLUS

CN Benzene, 1,1'-[methylenebis(thio)]bis[4-(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



RN 56255-65-3 CAPLUS

CN Benzene, 1,1'-[methylenebis(sulfonyl)]bis[4-(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)

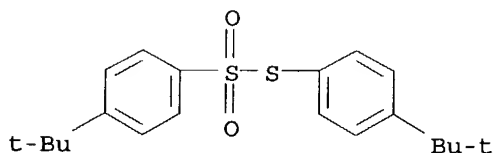


IT 31197-50-9P

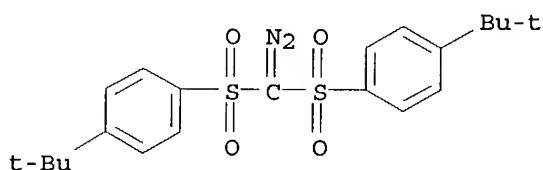
RL: FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, in photolysis of bis(tert-butylphenyl)sulfonyl diazomethane, submicron lithog. in relation to)

RN 31197-50-9 CAPLUS

CN Benzenesulfonothioic acid, 4-(1,1-dimethylethyl)-, S-[4-(1,1-dimethylethyl)phenyl] ester (9CI) (CA INDEX NAME)



IT 130290-80-1
 RL: USES (Uses)
 (photoacid generator, for deep-UV photoresists for submicron lithog.)
 RN 130290-80-1 CAPLUS
 CN Benzene, 1,1'-[(diazomethylene)bis(sulfonyl)]bis[4-(1,1-dimethylethyl)-
 (9CI) (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 22, 76
 ST arylsulfonyl diazomethane photoacid generator DUV photoresist; submicron
 lithog chem amplified UV **resist**; butylphenylsulfonyl
 diazomethane photochem lithog
 IT Photolysis
 (of bis(tert-butylphenyl)sulfonyl diazomethane, submicron lithog. in
 relation to)
 IT Photochemistry
 (of bisarylsulfonyl diazomethanes, submicron lithog. in relation to)
 IT **Resists**
 (photo-, deep-UV, bisarylsulfonyl diazomethane photoacid generating
 compds. for, for submicron lithog.)
 IT 3089-11-0, Hexamethoxymethylmelamine
 RL: USES (Uses)
 (deep UV **photoresist composition** containing photoacid
 generator bis(tert-butylphenyl)sulfonyl diazomethane and, for submicron
 lithog.)
 IT 29322-78-9, Poly(3-methyl-4-hydroxystyrene)
 RL: USES (Uses)
 (deep UV **photoresist composition** containing photoacid
 generator bis(tert-butylphenyl)sulfonyl diazomethane and, for submicron
 lithog.)
 IT 130290-81-2P
 RL: RCT (Reactant); **PREP** (Preparation); RACT (Reactant or
 reagent)

(formation and reaction of, in chemical amplified deep-UV
photoresist composition containing photoacid generating
compound)

IT 18068-20-7P 56255-65-3P

RL: RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or
reagent)

(formation and reaction of, in preparation of photoacid generating compound
for submicron lithog.)

IT 31197-50-9P

RL: FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, in photolysis of bis(tert-butylphenyl)sulfonyl
diazomethane, submicron lithog. in relation to)

IT 130290-80-1

RL: USES (Uses)
(photoacid generator, for deep-UV photoresists for submicron lithog.)

L51 ANSWER 35 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1989:584011 CAPLUS

DOCUMENT NUMBER: 111:184011

TITLE: Novel photoresist design based on electrophilic
aromatic substitution

AUTHOR(S): Reck, B.; Allen, R. D.; Twieg, R. J.; Willson, C. G.;
Matuszczak, S.; Stover, H. D. H.; Li, N. H.; Frechet,
J. M. J.

CORPORATE SOURCE: Almaden Res. Lab., IBM, San Jose, CA, 95120-6099, USA
SOURCE: Polymer Engineering and Science (1989), 29(14), 960-4
CODEN: PYESAZ; ISSN: 0032-3888

DOCUMENT TYPE: Journal

LANGUAGE: English

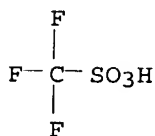
AB **Resist** materials that exhibit chemical amplification are based on
systems comprised of 3 structural units, at least 1 of which is polymeric:
(a) an aromatic moiety such as poly(4-hydroxystyrene), novolak, or other
aromatic compds. which are susceptible to electrophilic aromatic substitution;
(b) a latent electrophile which may be polyfunctional and, in the case of
this study, is a carbocation precursor; and (c) a material which
generates strong acid upon irradiation Exposure of a film
containing these 3 structural components affords a latent image of acid
dispersed in the polymer matrix. In a subsequent baking step, the
photogenerated acid reacts with the latent electrophile releasing a very
reactive carbocationic species which becomes bound to the aromatic moiety.
As 1 of the components of the **resist** is polymeric and
multifunctional, the result is a rapid increase in mol. weight due to
branching and **crosslinking** of the chains. In terms of imaging,
this process translates into the formation of a neg. image of the mask
although under some conditions a pos. image may also be produced. The
system shows a very high sensitivity and can provide high resolution images
devoid of distortion due to the absence of swelling during development.

IT 1493-13-6, Triflic acid

RL: TEM (Technical or engineered material use); USES (Uses)
(**photoresist composition** containing, based on electrophilic
aromatic substitution)

RN 1493-13-6 CAPLUS

CN Methanesulfonic acid, trifluoro- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 71449-78-0

RL: USES (Uses)

(photoresist containing, based on electrophilic aromatic substitution)

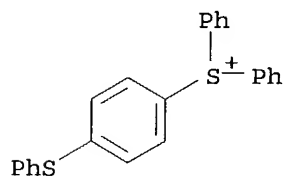
RN 71449-78-0 CAPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, (OC-6-11)-hexafluoroantimonate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 47480-44-4

CMF C24 H19 S2

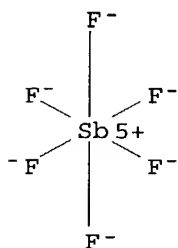


CM 2

CRN 17111-95-4

CMF F6 Sb

CCI CCS



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST photoresist polymer electrophilic arom substitution; acid precursor

- photoresist polymer reaction
- IT Phenolic resins, uses and miscellaneous
RL: USES (Uses)
(novolak, in photoresist based on electrophilic aromatic substitution)
- IT **Resists**
(photo-, with chemical amplification, containing polymer susceptible to electrophilic aromatic substitution and carbocation precursor and **acid generator**)
- IT 54691-64-4DP, derivs. 54691-64-4P
RL: FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, in photoresist based on electrophilic aromatic substitution)
- IT 140-11-4, Benzyl acetate 1493-13-6, Triflic acid 2628-17-3
14720-70-8 25086-36-6 123349-58-6
RL: TEM (Technical or engineered material use); USES (Uses)
(**photoresist composition** containing, based on electrophilic aromatic substitution)
- IT **71449-78-0**
RL: USES (Uses)
(photoresist containing, based on electrophilic aromatic substitution)

=>